

CALIFORNIA HIGH-SPEED TRAIN

Project Environmental Impact Report/Environmental Impact Statement

FINAL

Merced to Fresno Section
Project EIR/EIS

Volume III:

Section A2 – Alignment Plans

UPRR/SR 99 Alternative with Ave 24 Wye

April 2012



CALIFORNIA
High-Speed Rail Authority



U.S. Department of Transportation
Federal Railroad Administration



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VOLUME 1 - GENERAL & TRACK ALIGNMENT

| DRAWING No. | REV No. | DRAWING DESCRIPTION |
|-------------|---------|--|
| | | VOLUME 1A - GENERAL |
| GE-D0001 | | PACKAGE 1A - TITLE SHEET |
| GE-A0001 | | PACKAGE 1A - GENERAL - INDEX OF DRAWINGS |
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| VS-C0003 | | PACKAGE 1A - GENERAL - SURVEY CONTROL DATA - SHEET 3 OF 4 |
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| | | VOLUME 1B - TRACK ALIGNMENT |
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| TT-D3003 | | PACKAGE 1A - TRACK GUIDEWAY - TYPICAL SECTIONS |
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| CB3011 | | FRESNO SUBSECTION - ALIGNMET F1 - CROSS SECTIONS |
| TT-D0001 | | PACKAGE 1A - TRACK GUIDEWAY - HORIZONTAL ALIGNMENT DATA |
| TT-D1000 | | PACKAGE 1A - TRACK GUIDEWAY - PLAN AND PROFILE - STA. 10535+00 TO 10554+00 |
| TT-D1001 | | PACKAGE 1A - TRACK GUIDEWAY - PLAN AND PROFILE - STA. 10554+00 TO 10582+00 |
| TT-D1002 | | PACKAGE 1A - TRACK GUIDEWAY - PLAN AND PROFILE - STA. 10582+00 TO 10610+00 |
| TT-D1003 | | PACKAGE 1A - TRACK GUIDEWAY - PLAN AND PROFILE - STA. 10610+00 TO 10638+00 |
| TT-D1004 | | PACKAGE 1A - TRACK GUIDEWAY - PLAN AND PROFILE - STA. 10638+00 TO 10666+00 |
| TT-D1005 | | PACKAGE 1A - TRACK GUIDEWAY - PLAN AND PROFILE - STA. 10666+00 TO 10694+00 |
| TT-D1006 | | PACKAGE 1A - TRACK GUIDEWAY - PLAN AND PROFILE - STA. 10694+00 TO 10722+00 |
| TT-D1007 | | PACKAGE 1A - TRACK GUIDEWAY - PLAN AND PROFILE - STA. 10722+00 TO 10750+00 |
| TT-D1008 | | PACKAGE 1A - TRACK GUIDEWAY - PLAN AND PROFILE - STA. 10750+00 TO 10778+00 |
| TT-D1009 | | PACKAGE 1A - TRACK GUIDEWAY - PLAN AND PROFILE - STA. 10778+00 TO 10806+00 |
| TT-D1010 | | PACKAGE 1A - TRACK GUIDEWAY - PLAN AND PROFILE - STA. 10806+00 TO 10834+00 |
| TT-D1011 | | PACKAGE 1A - TRACK GUIDEWAY - PLAN AND PROFILE - STA. 10834+00 TO 10862+00 |
| TT-D1012 | | PACKAGE 1A - TRACK GUIDEWAY - PLAN AND PROFILE - STA. 10862+00 TO 10890+00 |
| TT-D1013 | | PACKAGE 1A - TRACK GUIDEWAY - PLAN AND PROFILE - STA. 10890+00 TO 10918+00 |
| TT-D1014 | | PACKAGE 1A - TRACK GUIDEWAY - PLAN AND PROFILE - STA. 10918+00 TO 10946+00 |
| TT-D1015 | | PACKAGE 1A - TRACK GUIDEWAY - PLAN AND PROFILE - STA. 10946+00 TO 10974+00 |
| CB1657 | | FRESNO SUBSECTION - ALIGNMET F1 - STA. 257+24.56 TO 261+00 |
| CB1658 | | FRESNO SUBSECTION - ALIGNMET F1 - STA. 261+00 TO 275+00 |

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| CB1659 | | FRESNO SUBSECTION - ALIGNMET F1 - STA. 275+00 TO 289+00 |
| CB1160 | | FRESNO SUBSECTION - ALIGNMET F1 - STA. 289+00 TO 303+00 |
| CB1161 | | FRESNO SUBSECTION - ALIGNMET F1 - STA. 303+00 TO 317+25 |
| | | |
| | | TT-D0016 TO TT-D1029 NOT USED |
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| TT-D1030 | | PACKAGE 1A - SJVRR SOUTH SPUR - PLAN AND PROFILE - STA. 0+00 TO STA. 8+68.74 |

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| DESIGNED BY |
| DRAWN BY A. SHIELDS |
| CHECKED BY A. BOONE |
| IN CHARGE A. BOONE |
| DATE 02/01/2012 |

PROPOSED
PRELIMINARY
DESIGN

NOT FOR
CONSTRUCTION



CALIFORNIA HIGH-SPEED TRAIN PROJECT
SIERRA SUBDIVISION
PACKAGE 1A
GENERAL
INDEX OF DRAWINGS

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| CONTRACT NO. |
| DRAWING NO. GE-A0001 |
| SCALE NONE |
| SHEET NO. |

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GENERAL NOTES

A. GENERAL

- 1. IN-SCOPE AND AND NOT IN-SCOPE ITEMS ARE INDENTIFIED IN THE SCOPE OF WORK ATTACHMENT (ELEMENTS MATRIX + SCOPING TYPICAL SECTIONS)
- 2. REFER TO SCOPE OF WORK DOCUMENTATION IN THE PROCUREMENT PACKAGE FOR SCOPE REQUIREMENTS. FINAL DESIGN AND DIMENSIONS SHALL BE BASED ON DESIGN CRITERIA, DIRECTIVE DRAWINGS AND STANDARD DRAWING REQUIREMENTS.

B. CONTROL SURVEY AND MAPPING:

- 1. NAD 83 (NSRS2007), (1991.35)CALIFORNIA COORDINATE SYSTEM DATUM SHALL BE USED AS HORIZONTAL COORDINATE VALUES.
- 2. NAVD 88 VERTICAL DATUM SHALL TO BE USED AS VERTICAL DATUM.
- 3. MAPPING SHALL BE BASED ON CALIFORNIA COORDINATE SYSTEM (CCS 83) IN US CUSTOMARY UNITS.
- 4. NETWORK OF CONTROL SURVEY MONUMENTS WAS ESTABLISHED AT TWO MILE INTERVALS ALONG THE CHSTP ALIGNMENT. THESE CONTROL MONUMENTS SHALL BE USED IN FUTURE SURVEYS TO ENSURE THAT SURVEY ACTIVITIES ARE BASED ON THE SAME ADJUSTMENT POSITIONS AND EPOCH THAT TRANSITIONS BETWEEN ZONES OF THE CALIFORNIA COORDINATE SYSTEM ARE UNIFORM AND CORRECT.

TRACK GENERAL NOTES:

A. GENERAL TRACK NOTES:

- 1. THE GENERAL BASIS FOR TRACK STANDARDS AND MATERIALS SHALL BE THE AREMA MANUAL.
- 2. TRACK AND TRACK COMPONENTS SHALL BE DESIGNED AND FABIRICATED TO PERFORM UNDER THE PREVAILING AND EXTREME CLIMATIC AND ENVIRONMENTAL CONDITIONS OCCURING WITHIN THE GEOGRAPHIC EXTENT OF THE SYSTEM.
- 3. THE PROFILE IS CARRIED ON THE TOP OF LOWER RAIL THROUGH HORIZONTAL CURVES AND SPIRALS FOR THE DESIGNATED TRACK.
- 4. THE LENGTHS OF LINES ARE BASED ON CENTER OF TRACK ALIGNMENT.
- 5. UNLESS SEPARATE TRACK PROFILES ARE GIVEN, TRACK PARALLEL TO THE DESIGNATED TRACK ARE AT THE SAME TOP OF RAIL ELEVATIONS PROJECTED ON EITHER PERPENDICULAR OR RADIAL LINES FROM THE DESIGNATED TRACK CENTERLINES.
- 6. BALLASTED TRACKS ARE GENERALLY PREFERRED FOR YARD TRACKS. DESIGNERS SHALL FOLLOW THE REQUIREMENTS ASSOCIATED WITH CONSTRUCTION OF BALLASTED TRACK IN THE CALIFORNIA HIGH SPEED TRAIN DESIGN MANUAL.
- 7. DIMENSIONS SHOWN ON THE DESIGN DRAWINGS WERE DEVELOPED BY PRELIMINARY ENGINEERING AND FINAL DIMINSIONS WILL BE DETERMINED ON THE FINAL TRACK PLANS BY THE DESIGN BUILDER.
- 8. "ORIGINAL GROUND" SHOWN ON CROSS SECTIONS REFERS TO THE APPROXIMATE EXISTING GROUND LINE AT THE DESIGNATED CENTERLINE, BASELINE, LAYOUT LINE OR SECTION LINE.

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| DESIGNED BY A. SHIELDS |
| DRAWN BY A. SHIELDS |
| CHECKED BY A. BOONE |
| IN CHARGE A. BOONE |
| DATE 02/01/2012 |

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PRELIMINARY
DESIGN

NOT FOR
CONSTRUCTION



CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
SIERRA SUBDIVISION
PACKAGE 1A
TRACK GUIDEWAY
GENERAL NOTES

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| CONTRACT NO. |
| DRAWING NO. TT-B0001 |
| SCALE NONE |
| SHEET NO. |

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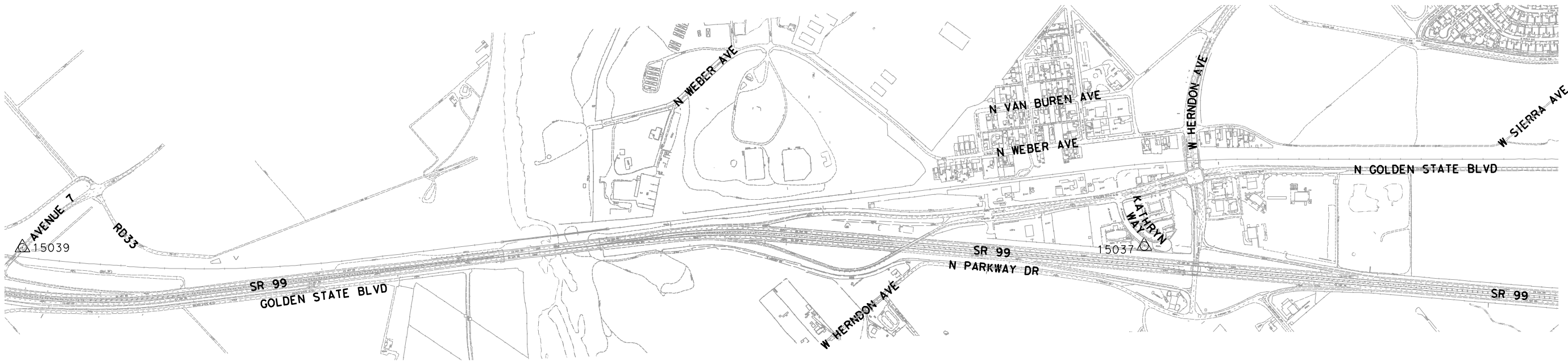
NOTES:

1. HORIZONTAL CONTROL DATUM:

THE HORIZONTAL GRID COORDINATES SHOWN HEREIN ARE BASED UPON THE NORTH AMERICAN DATUM OF 1983 (NAD 83), CALIFORNIA STATE PLANE COORDINATE SYSTEM, ZONE IV.
2. VERTICAL CONTROL DATUM:

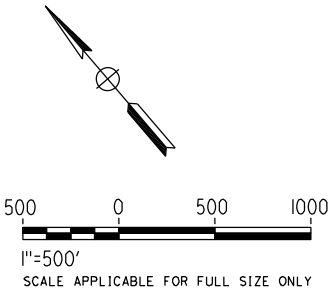
THE VERTICAL DATUM FOR THE ELEVATIONS SHOWN HEREIN ARE BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
3. PROJECTION:

LAMBERT CONIC PROJECTION



HORIZONTAL AND VERTICAL CONTROL INFORMATION

| POINT # | DESCRIPTION | NORTHING | EASTING | ELEVATION |
|---------|---|-------------|-------------|-----------|
| 15037 | PB CONTROL: S182-P 2 1/2" BRONZE DISK IN 1" IRON PIPE IN 8" CONCRETE PIER, STAMPED "CHSRA S182P LS 4430 2010" | 2187855.88 | 6292923.69 | 300.64 |
| 15039 | NGS CONTROL: DG9697 | 2194533.009 | 6285098.921 | 318.89 |



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| DESIGNED BY A. SHIELDS |
| DRAWN BY F. DeMARCO |
| CHECKED BY S. WONG |
| IN CHARGE A. BOONE |
| DATE 01/09/2012 |

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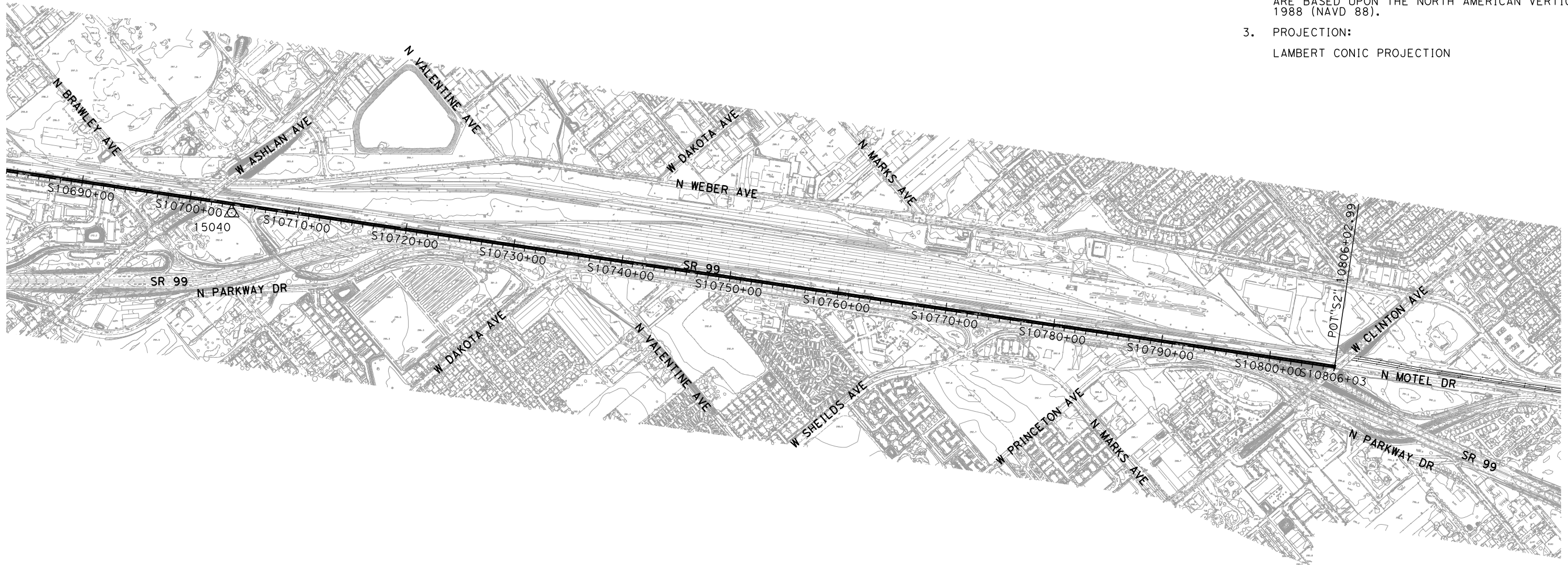
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CALIFORNIA HIGH-SPEED TRAIN PROJECT
SIERRA SUBDIVISION
PACKAGE 1A
GENERAL
SURVEY CONTROL DATA
SHEET 1 OF 4

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| CONTRACT NO. |
| DRAWING NO. VS-C0001 |
| SCALE AS SHOWN |
| SHEET NO. |

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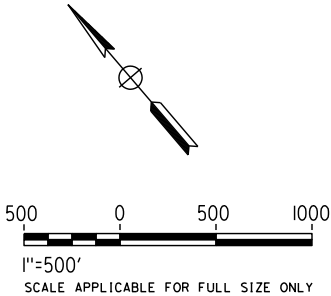


NOTES:

- HORIZONTAL CONTROL DATUM:
THE HORIZONTAL GRID COORDINATES SHOWN HEREIN ARE BASED UPON THE NORTH AMERICAN DATUM OF 1983 (NAD 83), CALIFORNIA STATE PLANE COORDINATE SYSTEM, ZONE IV.
- VERTICAL CONTROL DATUM:
THE VERTICAL DATUM FOR THE ELEVATIONS SHOWN HEREIN ARE BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
- PROJECTION:
LAMBERT CONIC PROJECTION

HORIZONTAL AND VERTICAL CONTROL INFORMATION

| POINT # | DESCRIPTION | NORTHING | EASTING | ELEVATION |
|---------|---------------------|-------------|-------------|-----------|
| 15040 | NGS CONTROL: AC6102 | 2172846.932 | 6309610.265 | 292.45 |



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| DESIGNED BY A. SHIELDS |
| DRAWN BY F. DeMARCO |
| CHECKED BY S. WONG |
| IN CHARGE A. BOONE |
| DATE 02/01/2012 |

**PROPOSED
PRELIMINARY
DESIGN**

**NOT FOR
CONSTRUCTION**

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA 95811

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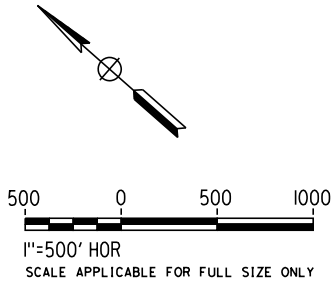
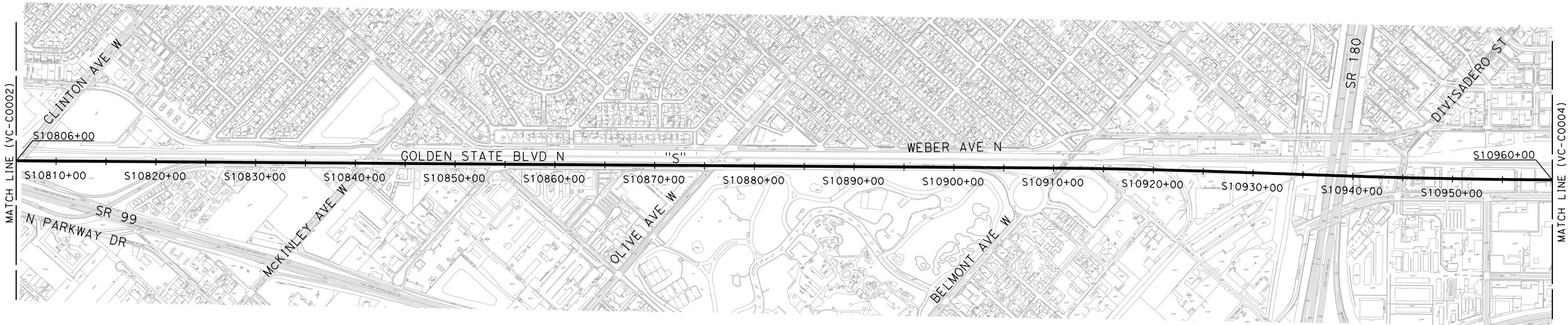


**CALIFORNIA HIGH-SPEED TRAIN PROJECT
SIERRA SUBDIVISION**
PACKAGE 1A
GENERAL
SURVEY CONTROL DATA
SHEET 2 OF 4

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| CONTRACT NO. |
| DRAWING NO. VS-C0002 |
| SCALE AS SHOWN |
| SHEET NO. |

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- NOTES:
- FOR LOCATION OF CONTROL POINT # 15037 (S182P)
SEE SHEET VS-C001
 - FOR LOCATION OF CONTROL POINT # S193P
SEE SHEET VS-C0004



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| DESIGNED BY S. CHRISTENSEN |
| DRAWN BY S. AVILES |
| CHECKED BY J. LABANOWSKI |
| IN CHARGE G. HORTON |
| DATE 12/08/11 |

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DESIGN

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CALIFORNIA HIGH-SPEED TRAIN PROJECT
SIERRA SUBDIVISION
PACKAGE 1A
GENERAL
SURVEY CONTROL DATA
SHEET 3 OF 4

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| CONTRACT NO. |
| DRAWING NO. VS-C0003 |
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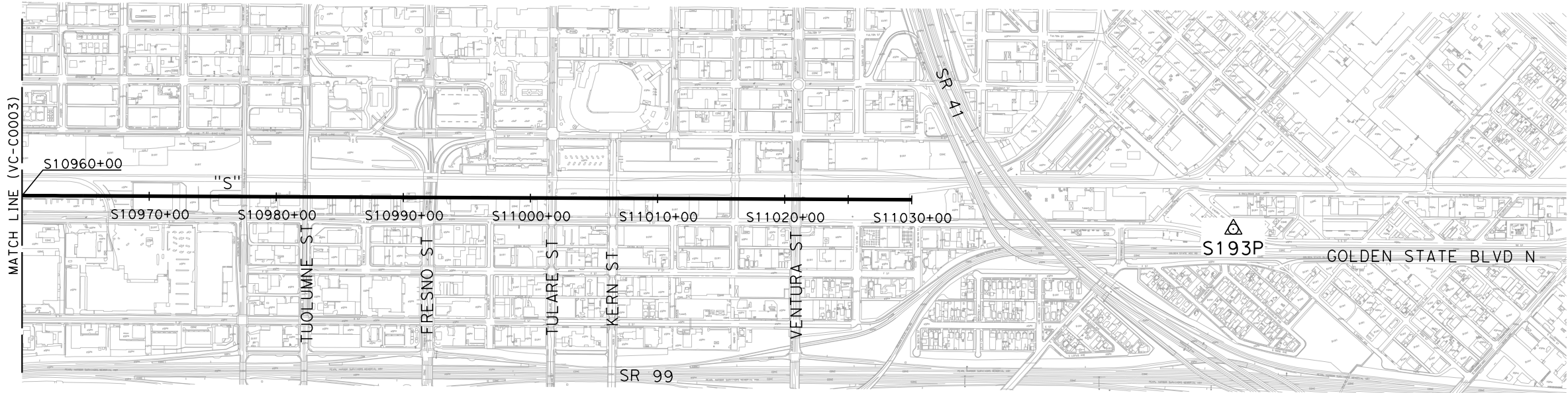
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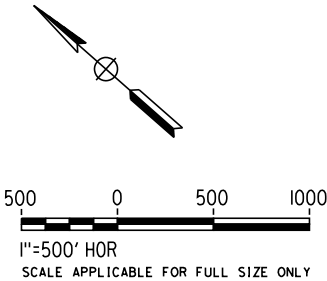
1. DATA SHOWN HEREON IS BASED ON SURVEY CONTROL MONUMENT DATA SHEETS AND MAP ON FILE IN THE OFFICE OF THE CHSRA
2. HORIZONTAL CONTROL DATUM:

THE HORIZONTAL GRID COORDINATES SHOWN HEREIN ARE BASED UPON THE NORTH AMERICAN DATUM OF 1983 (NAD83). CALIFORNIA STATE PLANE COORDINATE SYSTEM, ZONE IV, US SURVEY FEET
3. VERTICAL CONTROL DATUM:
THE VERTICAL CONTROL DATUM FOR THE ELEVATIONS SHOWN HEREIN ARE BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), US SURVEY FEET
4. PROJECTION:

LAMBERT CONIC PROJECTION



| POINT # | DESCRIPTION | N | E | ELEV | LOCATION |
|---------|---|------------|------------|--------|---|
| S193P | FOUND STANDARD CHSRA 2-1/2" BRONZE DISK IN 1" IRON PIPE IN 8" CONCRETE PIER STAMPED "S193P LS4430 2010" | ZONE 4 | | 286.04 | IN THE CITY OF FRESNO, COUNTY OF FRESNO, 450 FEET SOUTHERLY ALONG CHERRY AVENUE FROM THE INTERSECTION OF CALIFORNIA AVENUE, 7.8 FEET WESTERLY OF THE WEST CURB FACE OF CHERRY AVENUE, 11.8 FEET NORTHEASTERLY OF THE NORTHEASTERLY CURB FACE OF G STREET. |
| | | 2146202.84 | 6332518.62 | | |



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| DESIGNED BY S. CHRISTENSEN |
| DRAWN BY S. AVILES |
| CHECKED BY J. LABANOWSKI |
| IN CHARGE G. HORTON |
| DATE 12/08/11 |

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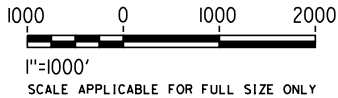
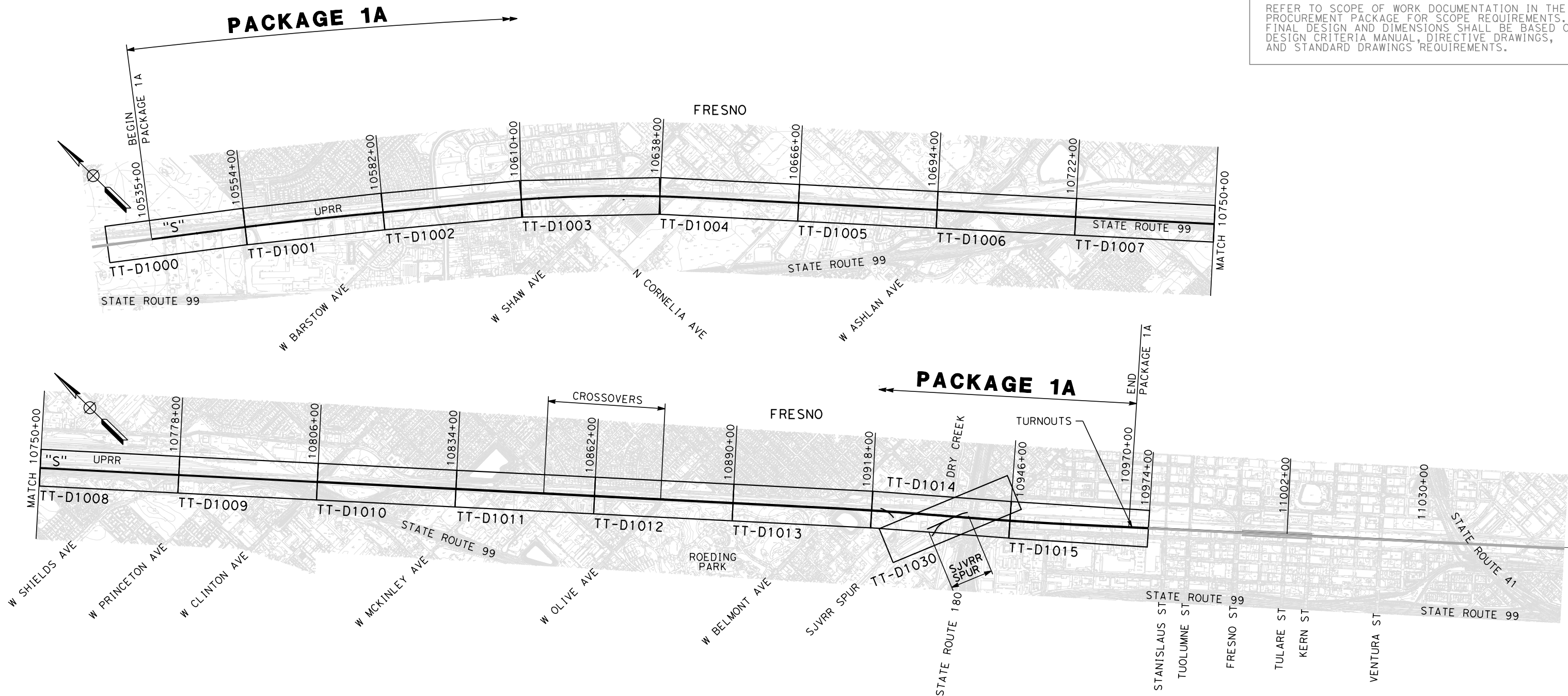


CALIFORNIA HIGH-SPEED TRAIN PROJECT
SIERRA SUBDIVISION

PACKAGE 1A
GENERAL
SURVEY CONTROL DATA
SHEET 4 OF 4

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| CONTRACT NO. |
| DRAWING NO. VS-C0004 |
| SCALE AS SHOWN |
| SHEET NO. |

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| DESIGNED BY K. SEYMOUR |
| DRAWN BY P. TONKIN |
| CHECKED BY D. HUNT |
| IN CHARGE R. COFFIN |
| DATE 02/17/12 |

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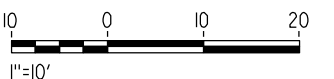
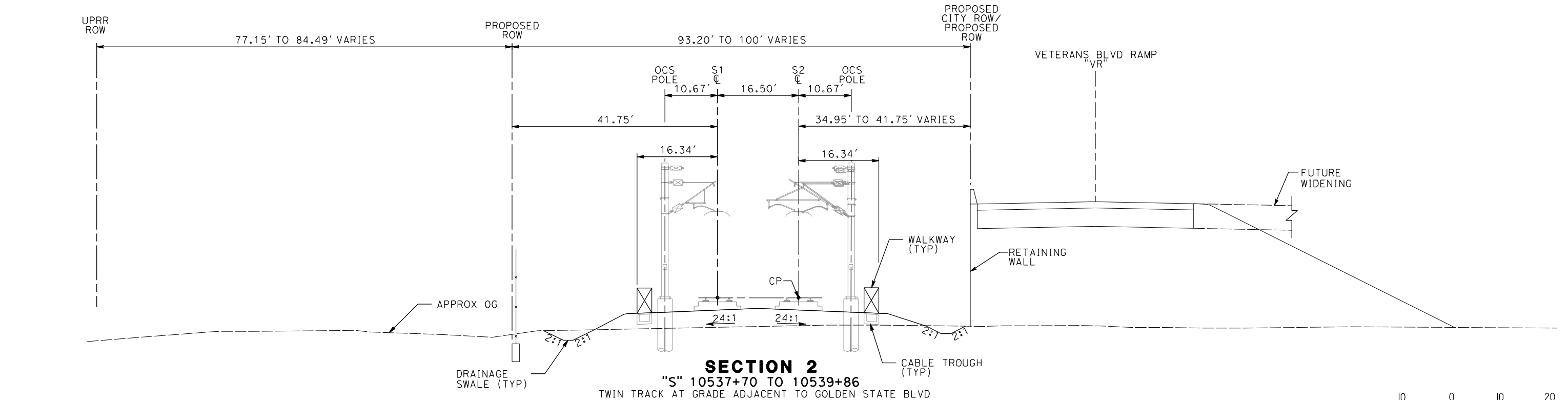
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**CALIFORNIA HIGH-SPEED TRAIN PROJECT
SIERRA SUBDIVISION**
PACKAGE 1A
TRACK GUIDEWAY
KEY MAP

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|-------------------------|
| CONTRACT NO. |
| DRAWING NO. TT-B0001 |
| SCALE AS SHOWN |
| SHEET NO. |

1. TRACKFORM SHOWN IS INDICATIVE.
2. FOR STRUCTURE DIMENSIONS, SEE STRUCTURAL CROSS SECTIONS.
3. SUPERELEVATION IS NOT SHOWN. THE AMOUNT OF APPLIED SUPERELEVATION IS SHOWN IN THE CURVE DATA TABLES.
4. SPACING OF OCS POLES TO BE DETERMINED.
5. FOR DRAINAGE DETAILS, SEE GRADING AND DRAINAGE DRAWINGS.
6. FOR ADDITIONAL ROADWAY INFORMATION, SEE ROADWAY DRAWINGS.



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| DESIGNED BY | A. SHIELDS |
| DRAWN BY | H. SULLIVAN |
| CHECKED BY | A. BOONE |
| IN CHARGE | A. BOONE |
| DATE | 01/09/2012 |

**PROPOSED
PRELIMINARY
DESIGN**

**NOT FOR
CONSTRUCTION**

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA 95811

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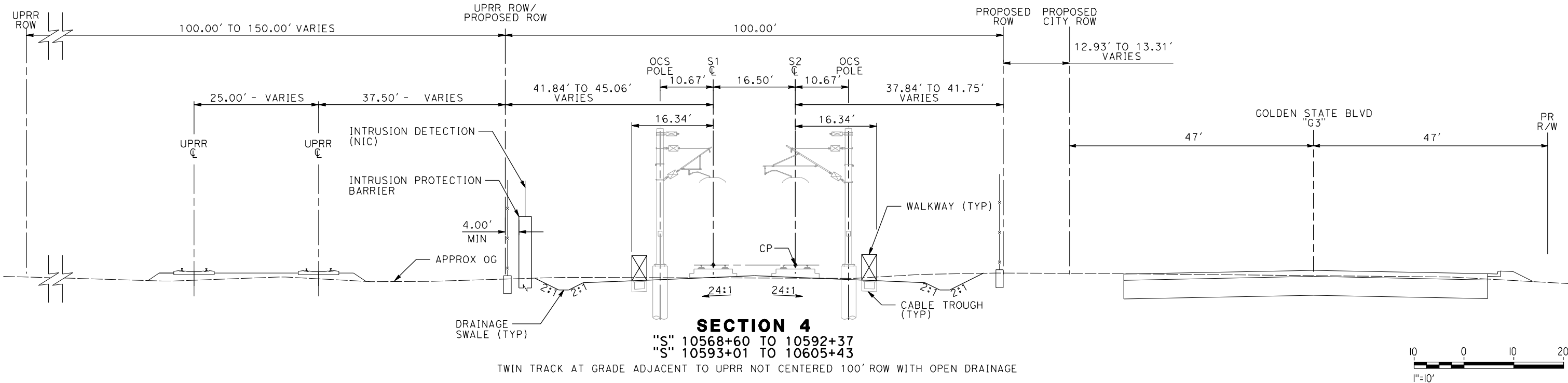
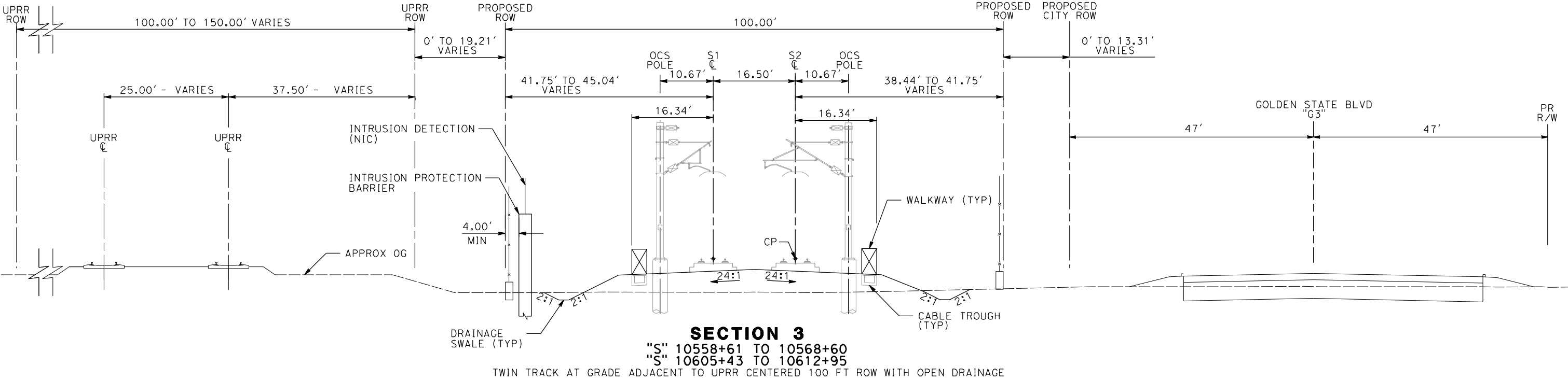


CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
SIERRA SUBDIVISION
PACKAGE 1A
TRACK GUIDEWAY
TYPICAL SECTIONS

| |
|-------------------------|
| CONTRACT NO. |
| DRAWING NO. TT-D3001 |
| SCALE AS SHOWN |
| SHEET NO. |

NOTES:
1. FOR ADDITIONAL NOTES SEE DRAWING TT-D001.



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| DESIGNED BY A. SHIELDS |
| DRAWN BY H. SULLIVAN |
| CHECKED BY A. BOONE |
| IN CHARGE A. BOONE |
| DATE 01/09/2012 |

PROPOSED
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DESIGN

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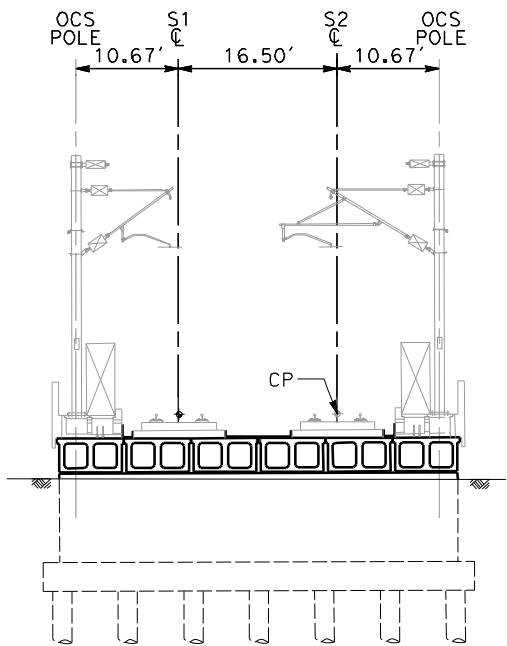


CALIFORNIA HIGH-SPEED TRAIN PROJECT
SIERRA SUBDIVISION
PACKAGE 1A
TRACK GUIDEWAY
TYPICAL SECTIONS

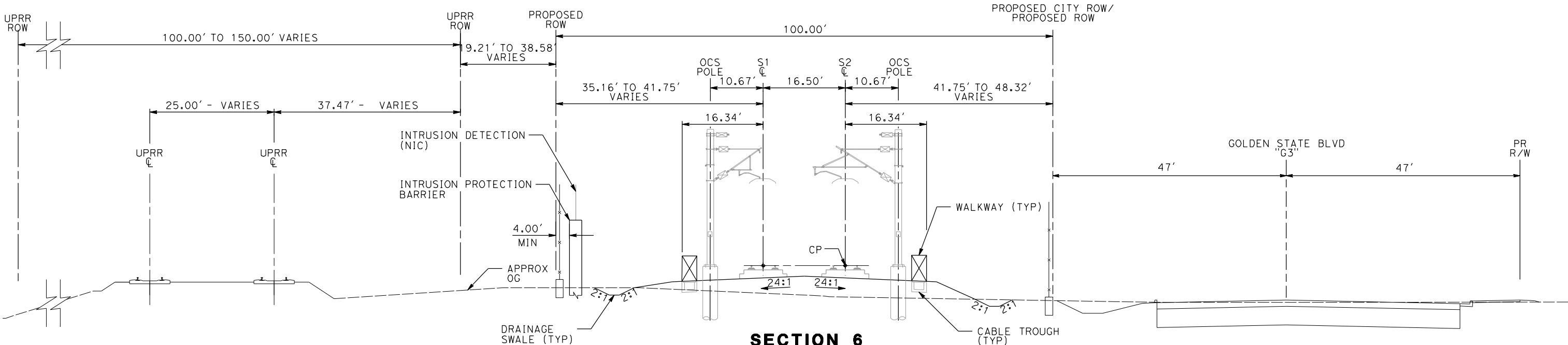
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sullivan

NOTES:
1. FOR ADDITIONAL NOTES, SEE DRAWING TT-D001.



SECTION 5
"S" 10592+37 TO 10593+01
TWIN TRACK OVER HERNDON CANAL



SECTION 6
"S" 10612+95 TO 10638+00
TWIN TRACK AT GRADE ADJACENT TO GOLDEN STATE BLVD CENTERED 100 FT ROW WITH OPEN DRAINAGE



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| DESIGNED BY A. SHIELDS |
| DRAWN BY H. SULLIVAN |
| CHECKED BY A. BOONE |
| IN CHARGE A. BOONE |
| DATE 01/09/2012 |

**PROPOSED
PRELIMINARY
DESIGN**

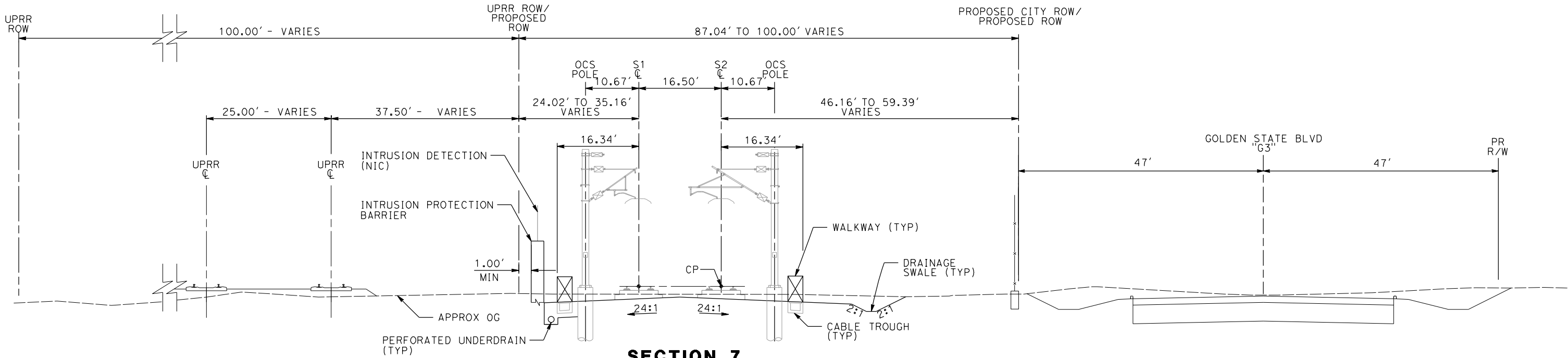
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CONSTRUCTION**



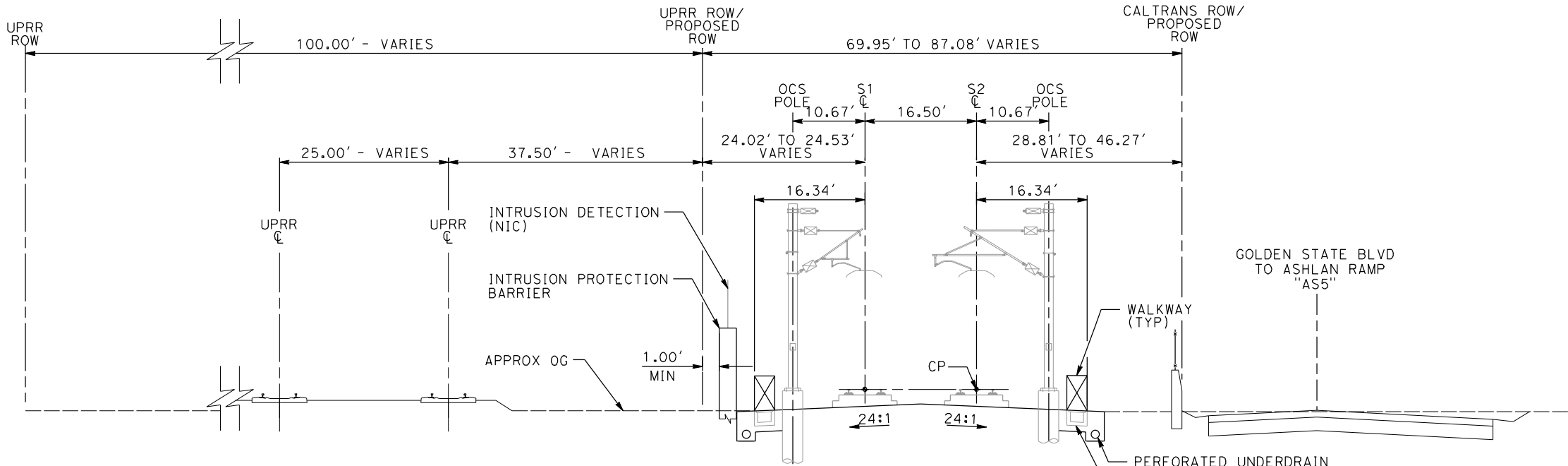
**CALIFORNIA HIGH-SPEED TRAIN PROJECT
SIERRA SUBDIVISION
PACKAGE 1A
TRACK GUIDEWAY
TYPICAL SECTIONS**

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| CONTRACT NO. |
| DRAWING NO. TT-D3003 |
| SCALE AS SHOWN |
| SHEET NO. |

NOTES:
1. FOR ADDITIONAL NOTES, SEE DRAWING TT-D001.



SECTION 7
"S" 10638+00 TO 10693+50
TWIN TRACK AT GRADE ADJACENT TO GOLDEN STATE BLVD NOT CENTERED 100 FT ROW WITH OPEN DRAINAGE



SECTION 8
"S" 10693+50 TO 10724+80
TWIN TRACK AT GRADE ADJACENT TO NB ASHLAND AVE OFF RAMP



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sullivan

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| DESIGNED BY A. SHIELDS |
| DRAWN BY H. SULLIVAN |
| CHECKED BY A. BOONE |
| IN CHARGE A. BOONE |
| DATE 01/09/2012 |

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| PROPOSED PRELIMINARY DESIGN |
| NOT FOR CONSTRUCTION |



Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA 95811

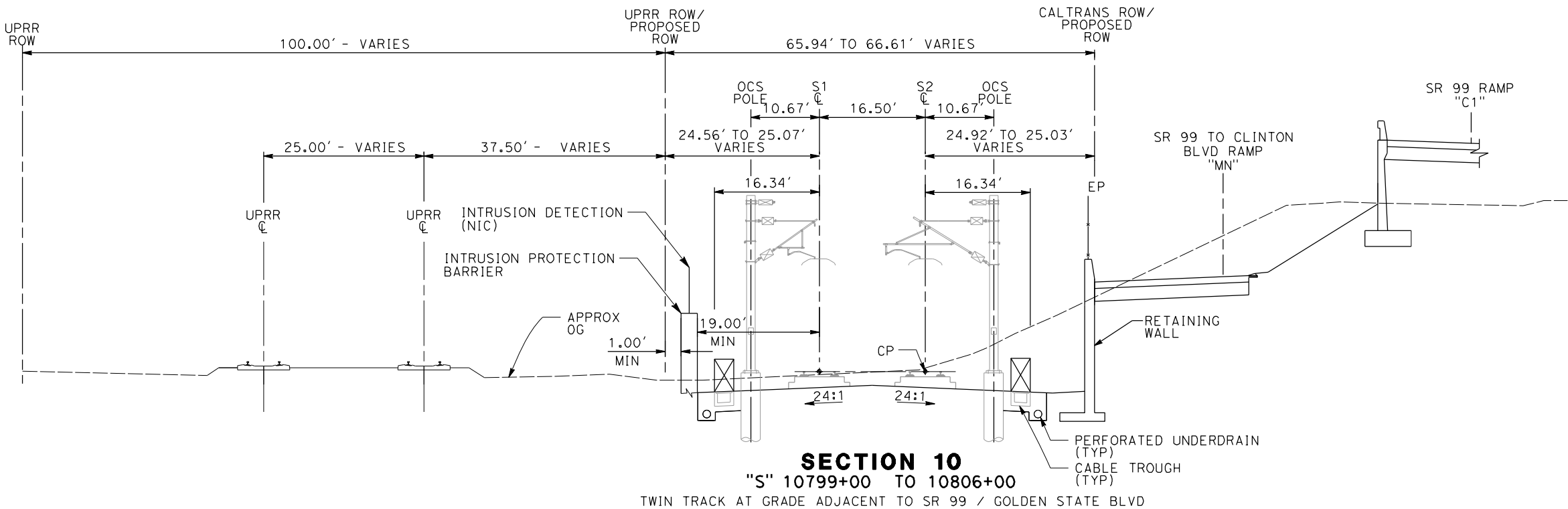
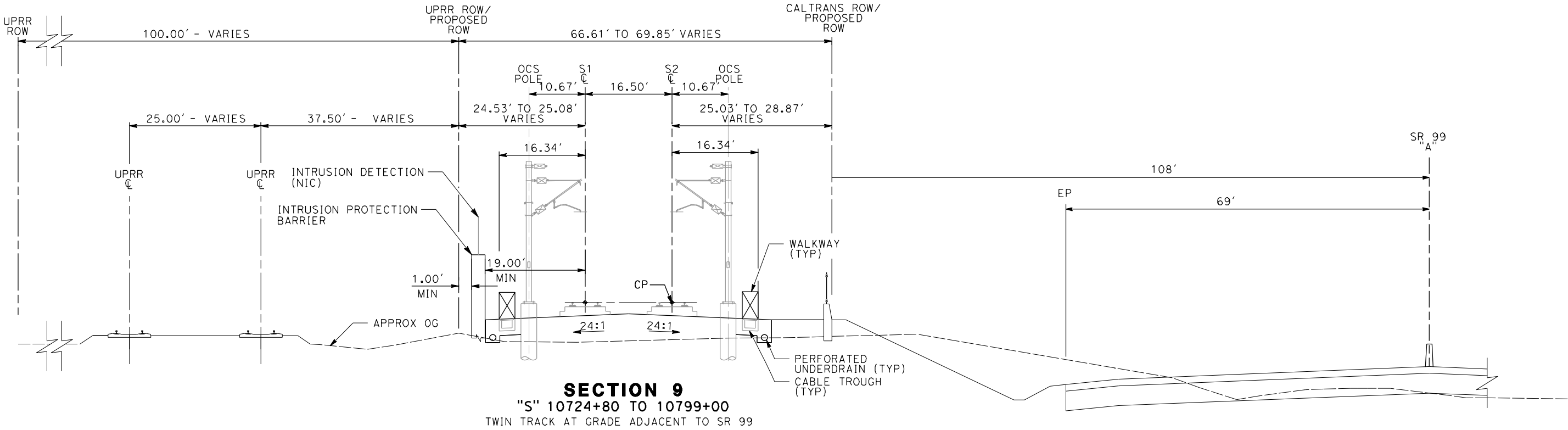




CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

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| CALIFORNIA HIGH-SPEED TRAIN PROJECT SIERRA SUBDIVISION | | CONTRACT NO. |
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| | | SHEET NO. |

NOTES:
1. FOR ADDITIONAL NOTES, SEE DRAWING TT-D001.



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| DESIGNED BY A. SHIELDS |
| DRAWN BY H. SULLIVAN |
| CHECKED BY A. BOONE |
| IN CHARGE A. BOONE |
| DATE 01/09/2012 |

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| NOT FOR CONSTRUCTION |

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Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA 95811

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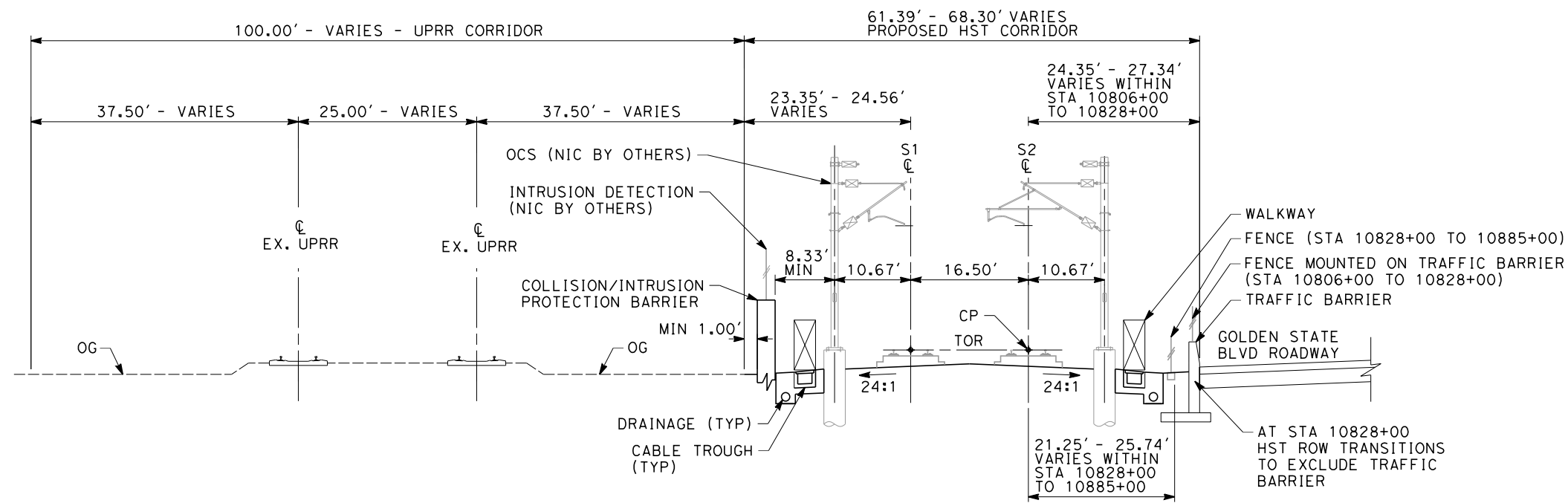


**CALIFORNIA HIGH-SPEED TRAIN PROJECT
SIERRA SUBDIVISION**
PACKAGE 1A
TRACK GUIDEWAY
TYPICAL SECTIONS

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| CONTRACT NO. |
| DRAWING NO. TT-D3005 |
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| DRAWING NO. TT-D3005 |
| SCALE AS SHOWN |
| SHEET NO. |

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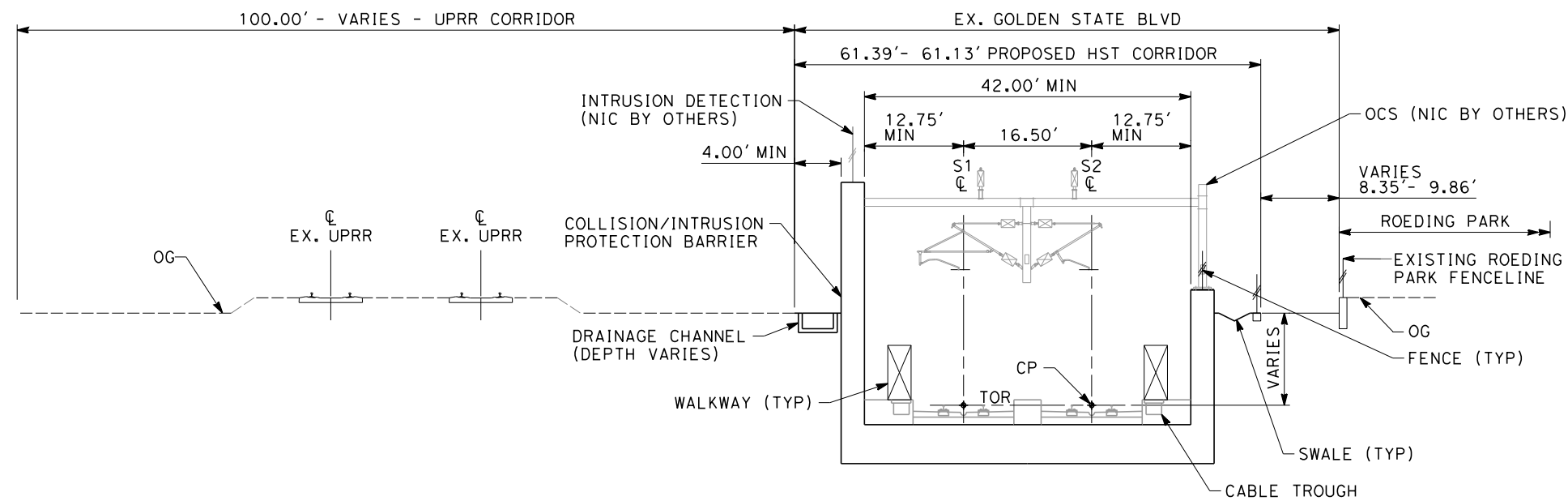


SECTION 11

"S" 10806+00 THROUGH 10885+00
TWIN TRACK AT GRADE ADJACENT TO UPRR

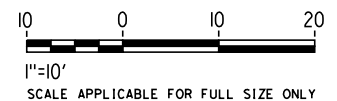
NOTES:

1. TRACKFORM SHOWN FOR INFORMATION ONLY (NIC BY OTHERS).
2. FOR STRUCTURE DIMENSIONS SEE STRUCTURAL TYPICAL SECTIONS.
3. SUPERELEVATION IS NOT SHOWN. THE AMOUNT OF APPLIED SUPERELEVATION IS SHOWN IN THE CURVE DATA TABLES.
4. COLLISION/INTRUSION PROTECTION BARRIER REQUIRED FROM STA 10806+00 - 10950+30



SECTION 12

"S" 10885+00 THROUGH 10902+50
TWIN TRACK IN GRADE SEPARATION ADJACENT
TO UPRR AND ROEDING PARK



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| DESIGNED BY K. SEYMOUR |
| DRAWN BY P. TONKIN |
| CHECKED BY D. HUNT |
| IN CHARGE R. COFFIN |
| DATE 02/17/12 |

**PROPOSED
PRELIMINARY
DESIGN**

**NOT FOR
CONSTRUCTION**

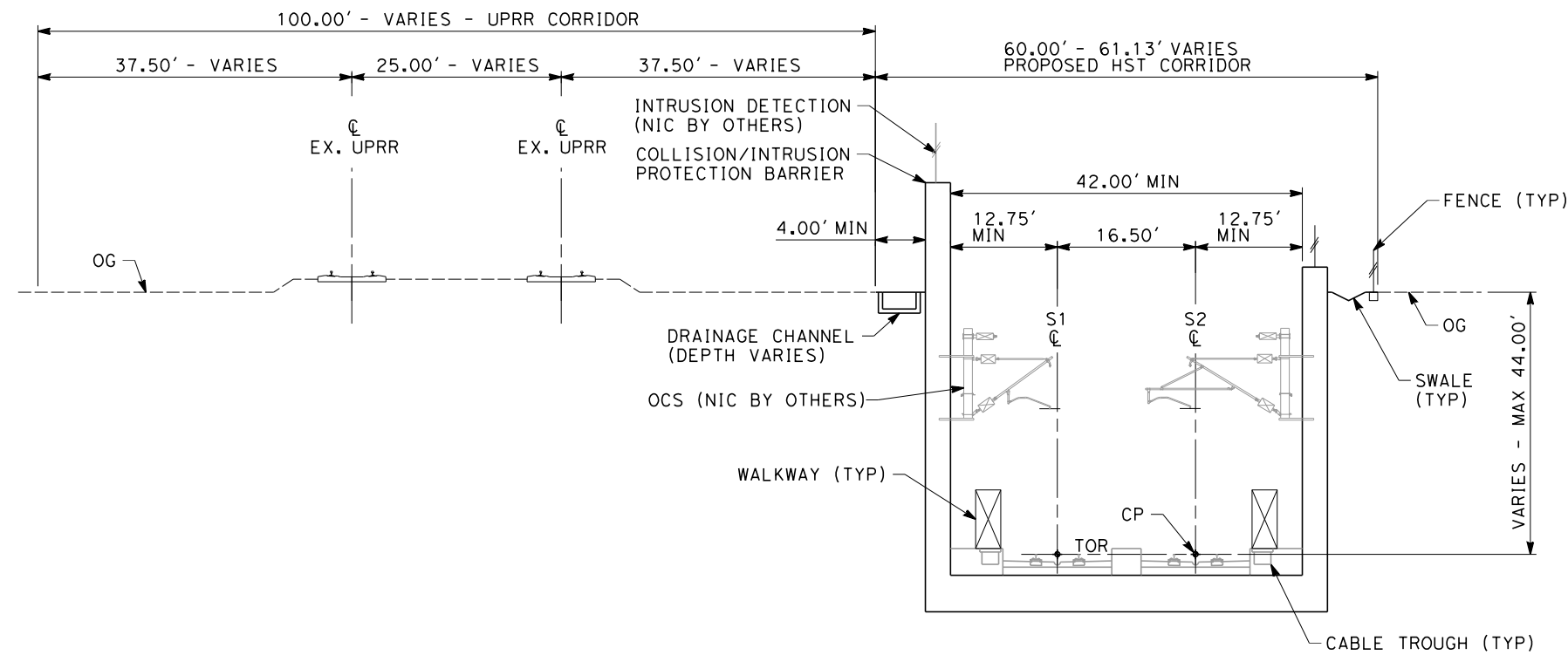


**CALIFORNIA HIGH-SPEED TRAIN PROJECT
SIERRA SUBDIVISION**

PACKAGE 1A
TRACK GUIDEWAY
TYPICAL SECTIONS

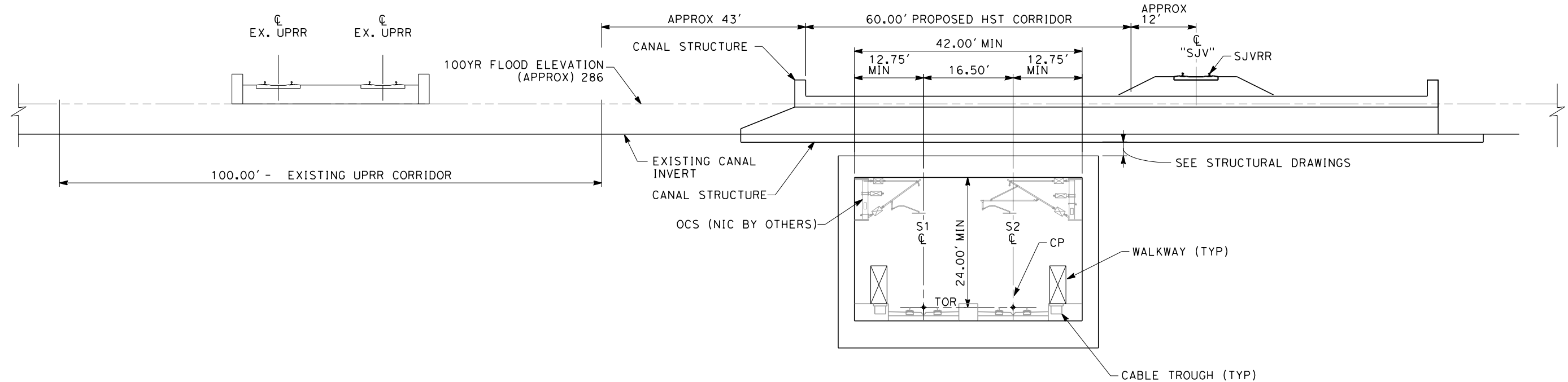
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| CONTRACT NO. |
| DRAWING NO. TT-D3006 |
| SCALE AS SHOWN |
| SHEET NO. |

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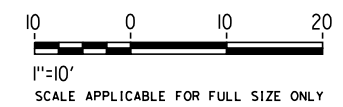


- NOTES:**
1. TRACKFORM SHOWN FOR INFORMATION ONLY (NIC BY OTHERS).
 2. SUPERELEVATION IS NOT SHOWN. THE AMOUNT OF APPLIED SUPERELEVATION IS SHOWN IN THE CURVE DATA TABLES.
 3. FOR STRUCTURAL DIMENSIONS SEE STRUCTURAL TYPICAL SECTIONS.
 4. COLLISION/INTRUSION PROTECTION BARRIER REQUIRED FROM STA 10806+00 - 10950+30

SECTION 13
"S" 10902+50 THROUGH 10936+55
"S" 10940+15 THROUGH 10951+00
ADJACENT TO UPRR



SECTION 14
"S" 10934+05
TWIN TRACK IN GRADE SEPARATION UNDER CANAL



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DESIGNED BY
K. SEYMOUR
DRAWN BY
P. TONKIN
CHECKED BY
D. HUNT
IN CHARGE
R. COFFIN
DATE
02/17/12

**PROPOSED
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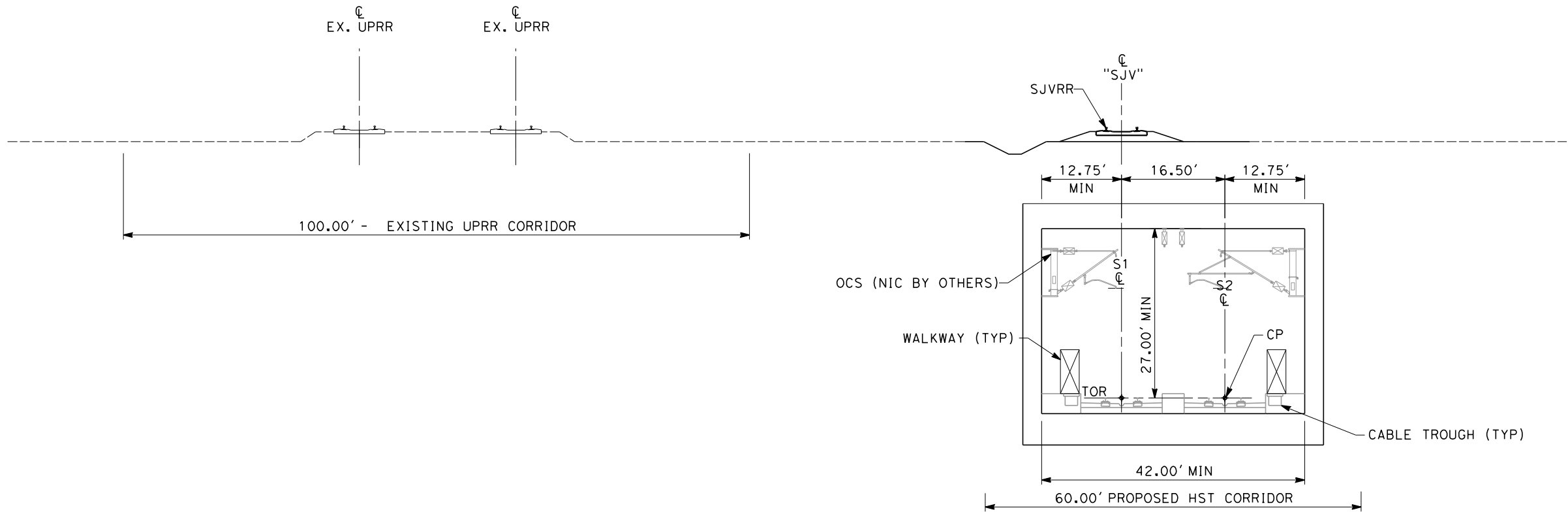
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**CALIFORNIA HIGH-SPEED TRAIN PROJECT
SIERRA SUBDIVISION**
PACKAGE 1A
TRACK GUIDEWAY
TYPICAL SECTIONS

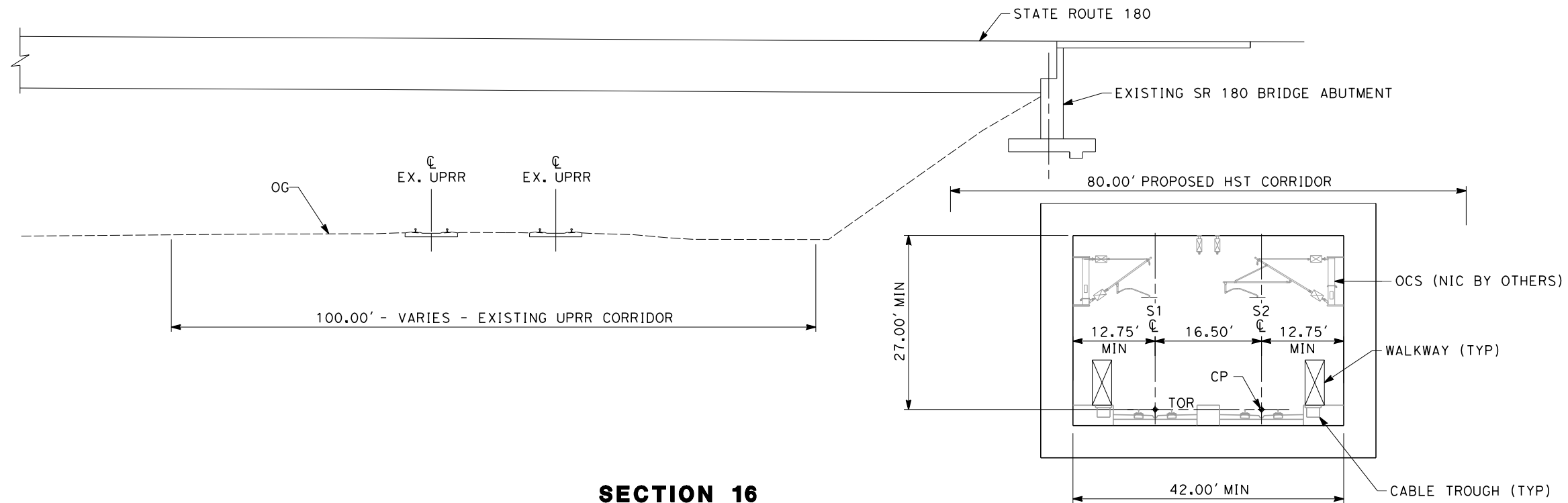
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SECTION 15

"S" 10934+90
TWIN TRACK UNDER SJVRR

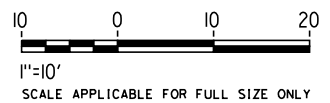


SECTION 16

"S" 10936+55 THROUGH 10940+15
TWIN TRACK IN BOX ADJACENT TO SR-180 ABUTMENT

NOTES:

1. TRACKFORM SHOWN FOR INFORMATION ONLY (NIC BY OTHERS).
2. FOR STRUCTURAL DIMENSIONS SEE STRUCTURAL TYPICAL SECTIONS.
3. SUPERELEVATION IS NOT SHOWN. THE AMOUNT OF APPLIED SUPERELEVATION IS SHOWN IN THE CURVE DATA TABLES.



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| DESIGNED BY K. SEYMOUR |
| DRAWN BY P. TONKIN |
| CHECKED BY D. HUNT |
| IN CHARGE R. COFFIN |
| DATE 02/17/12 |

**PROPOSED
PRELIMINARY
DESIGN**

**NOT FOR
CONSTRUCTION**



CALIFORNIA HIGH-SPEED TRAIN PROJECT
SIERRA SUBDIVISION
PACKAGE 1A
TRACK GUIDEWAY
TYPICAL SECTIONS

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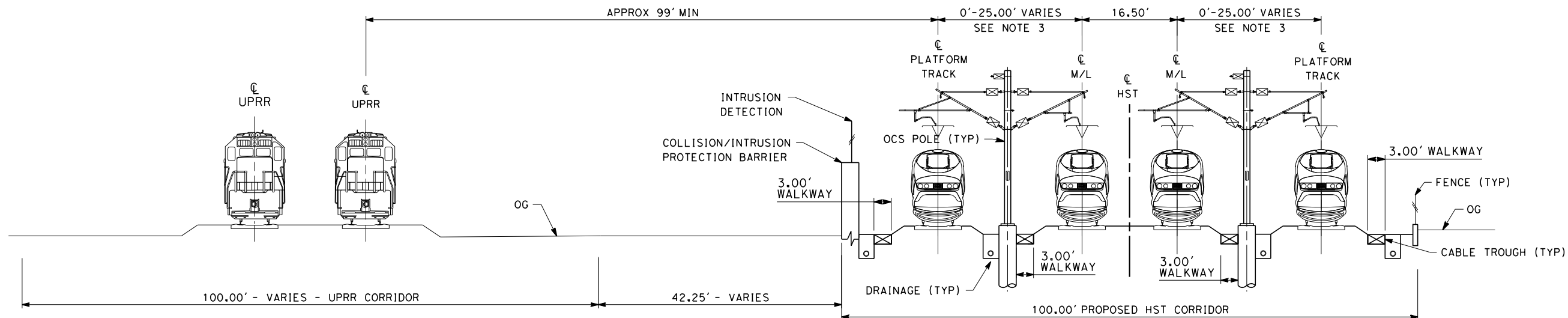
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DRAWING NO.
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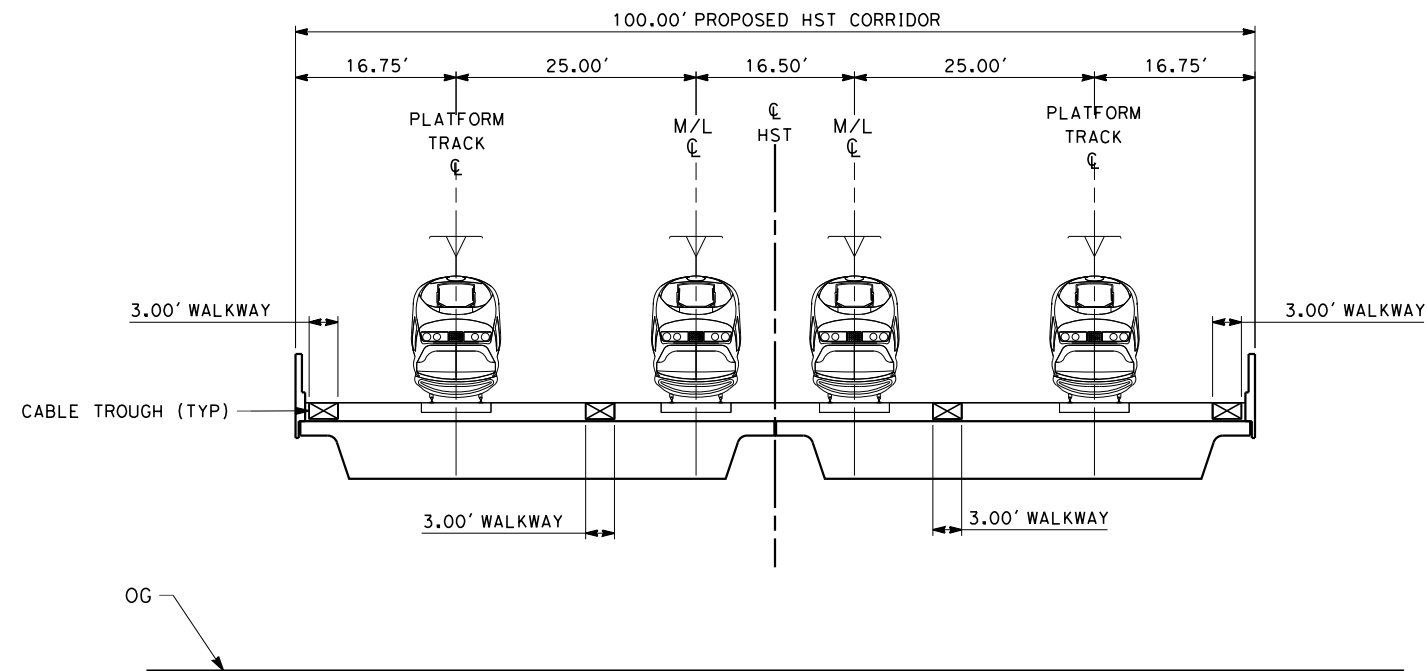
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SECTION 1

TWIN TRACK AT GRADE 100FT ROW ADJACENT TO UPRR
STA 257+25 THROUGH STA 278+77
STA 279+92 THROUGH STA 280+20
STA 294+30 THROUGH STA 295+05
STA 313+25 THROUGH STA 317+25



SECTION 2

4 TRACK - BRIDGE STRUCTURE
STA 278+77 THROUGH STA 279+92

NOTES:

1. TRACKFORM SHOWN IS INDICATIVE
2. FOR STRUCTURE DIMENSIONS SEE STRUCTURAL CROSS SECTIONS
3. DISTANCE BETWEEN TWO TRACKS VARIES FROM 0-25.00' THROUGH TURNOUTS AND REVERSE TO PARALLEL.



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| DESIGNED BY K. SEYMOUR |
| DRAWN BY P. TONKIN |
| CHECKED BY D. HUNT |
| IN CHARGE R. COFFIN |
| DATE 02/15/12 |

**RECORD SET 15%
DESIGN SUBMISSION**

**NOT FOR
CONSTRUCTION**



CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

**CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD**

FRESNO SUBSECTION
ALIGNMENT F1
CROSS SECTIONS

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| CONTRACT NO. HSR 06-0003 |
| DRAWING NO. CB3010 |
| SCALE AS SHOWN |
| SHEET NO. 18 OF 23 |

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NOTES:

1. THE S1 LINE IS OFFSET TO S2 LINE BY 16.50 FEET.

| TRACK GEOMETRY DATA ALONG SOUTHBOUND(S2) TRACK CENTERLINE | | | | | | | | | | | | | |
|---|--------------|--------------|--------------|------------|-------------|------------------|-----------|------------|----------------|------------|------------|------------|------------|
| CURVE NO. | DESCRIPTION | STATION | NORTHING | EASTING | BEARING | DISTANCE (FT) | R (FT) | Lc (FT) | SPIRAL TYPE | Ls (FT) | Ea (in) | Eu (in) | V (MPH) |
| 101 | POB | S10535+00.00 | 2184645.09 | 6297590.88 | S51°24'12"E | 919.91 | | | HALF SINE | 1200.00 | | | 250 |
| | TS | S10544+19.91 | 2184071.22 | 6298309.85 | | | | | | | | | 250 |
| | SC | S10556+19.91 | 2183320.23 | 6299245.81 | | | 70000.00 | 1202.39 | HALF SINE | 1200.00 | 3.00 | 0.57 | 250 |
| | CS | S10568+22.31 | 2182554.13 | 6300172.52 | | | | | | | | | 250 |
| | ST | S10580+22.31 | 2181776.12 | 6301086.14 | S49°26'13"E | 1333.20 | | | HALF SINE | 1200.00 | | | 250 |
| TS | S10593+55.51 | 2180909.17 | 6302098.96 | 250 | | | | | | | | | |
| 102 | SC | S10613+55.51 | 2179592.62 | 6303604.36 | | | 28000.00 | 2109.81 | HALF SINE | 2000.00 | 6.00 | 2.93 | 250 |
| | CS | S10634+65.32 | 2178107.16 | 6305101.90 | | | | | | | | | 250 |
| | ST | S10654+65.32 | 2176612.48 | 6306430.60 | S41°01'38"E | 24843.38 | | | HALF SINE | 2000.00 | | | 250 |
| | TS | S10903+08.70 | 2157870.69 | 6322738.24 | | | | | | | | | 250 |
| 103 | SC | S10913+08.70 | 2157114.93 | 6323393.08 | | | 71400.00 | 1002.81 | HALF SINE | 1000.00 | 1.50 | 1.21 | 220 |
| | CS | S10923+11.52 | 2156349.26 | 6324040.66 | | | | | | | | | 220 |
| | SS | S10933+11.52 | 2155578.08 | 6324677.27 | | | 71416.50 | 1166.50 | HALF SINE | 1000.00 | 1.50 | 1.21 | 220 |
| | SC | S10943+11.52 | 2154806.89 | 6325313.88 | | | | | | | | | 220 |
| 104 | CS | S10954+78.01 | 2153917.10 | 6326068.18 | | | | | HALF SINE | 1000.00 | | | 220 |
| | ST | S10964+78.01 | 2153162.84 | 6326724.75 | | | | | | | | | 220 |
| | | POT | S10974+00.00 | 2154806.89 | 6335459.98 | S41°09'29"E | 921.99 | | | | | | |

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| DESIGNED BY A. SHIELDS |
| DRAWN BY H. SULLIVAN |
| CHECKED BY A. BOONE |
| IN CHARGE A. BOONE |
| DATE 02/01/2012 |

PROPOSED
PRELIMINARY
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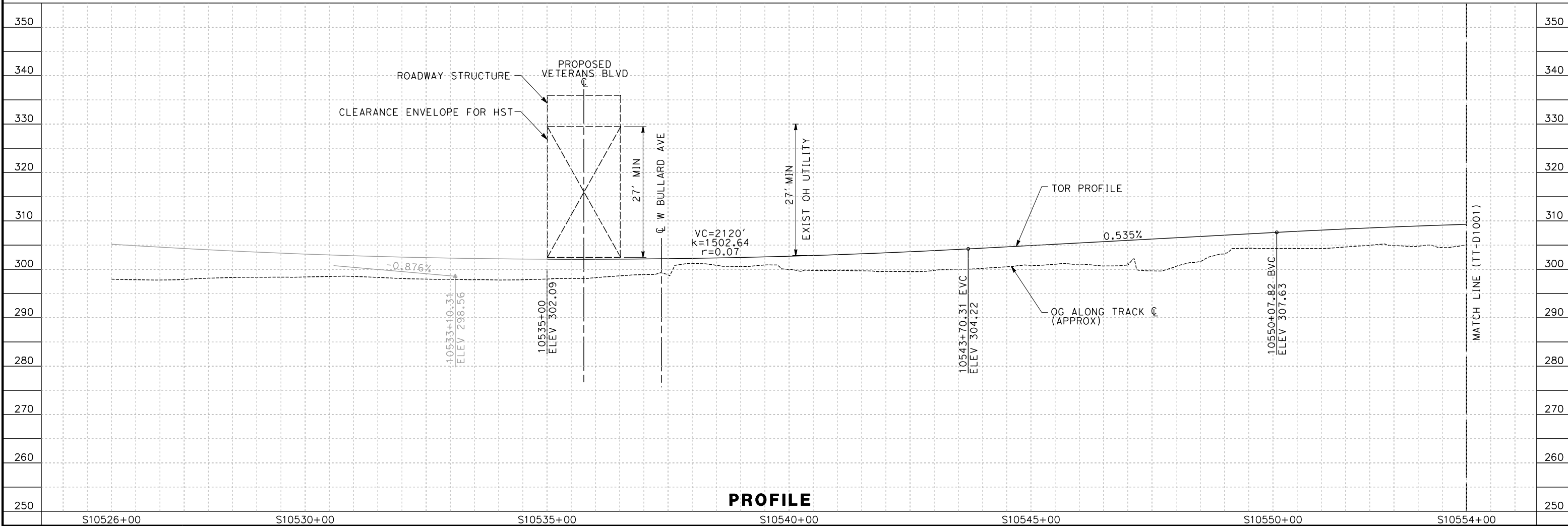
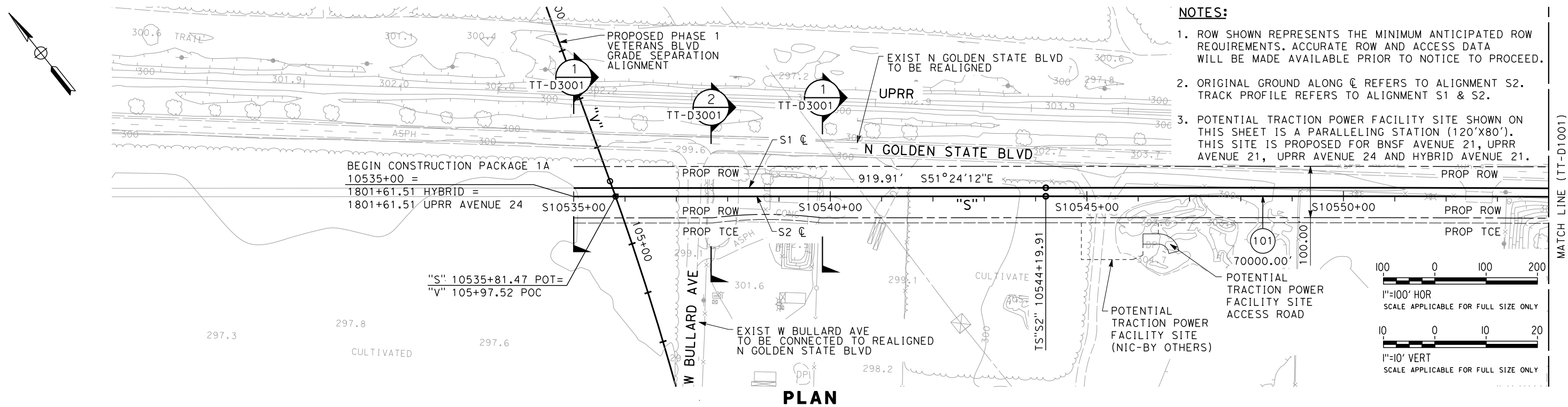
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CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

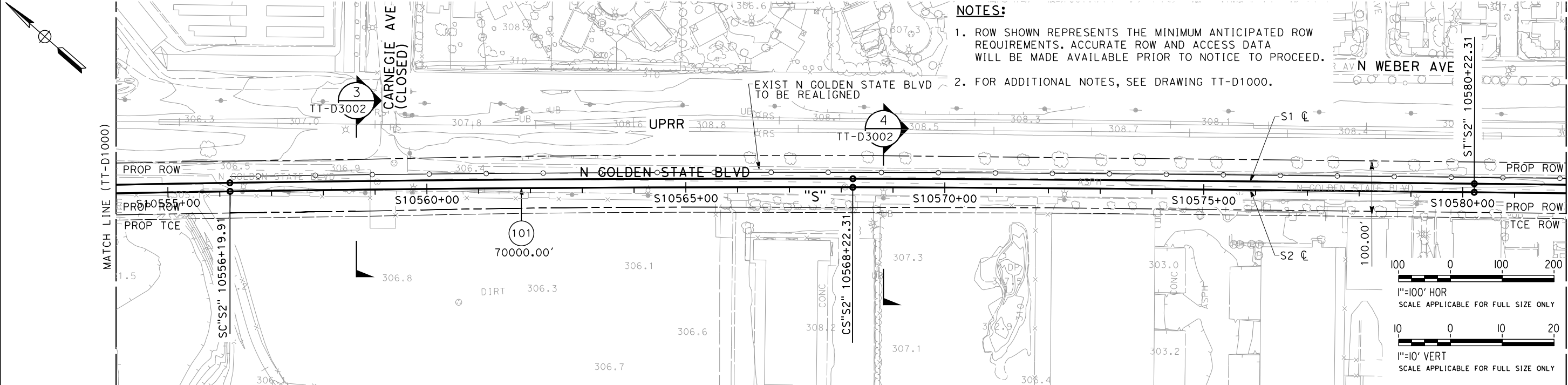
CALIFORNIA HIGH-SPEED TRAIN PROJECT
SIERRA SUBDIVISION
PACKAGE 1A
TRACK GUIDEWAY
HORIZONTAL ALIGNMENT DATA

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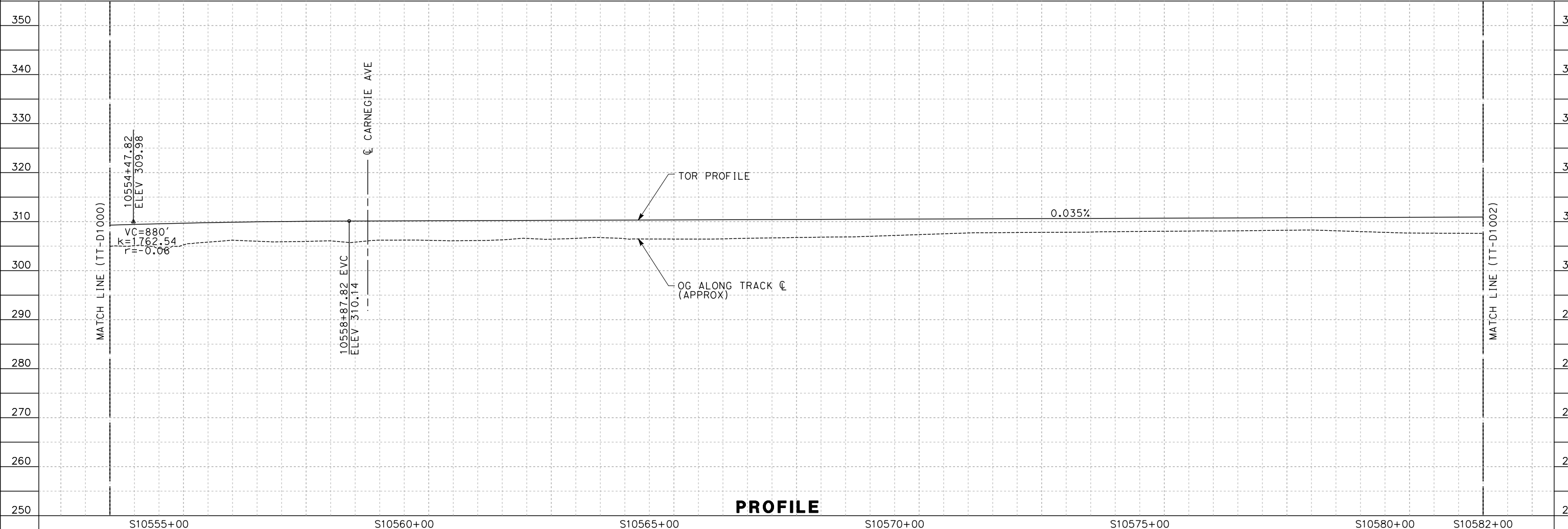
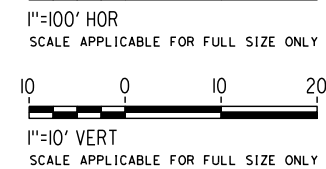


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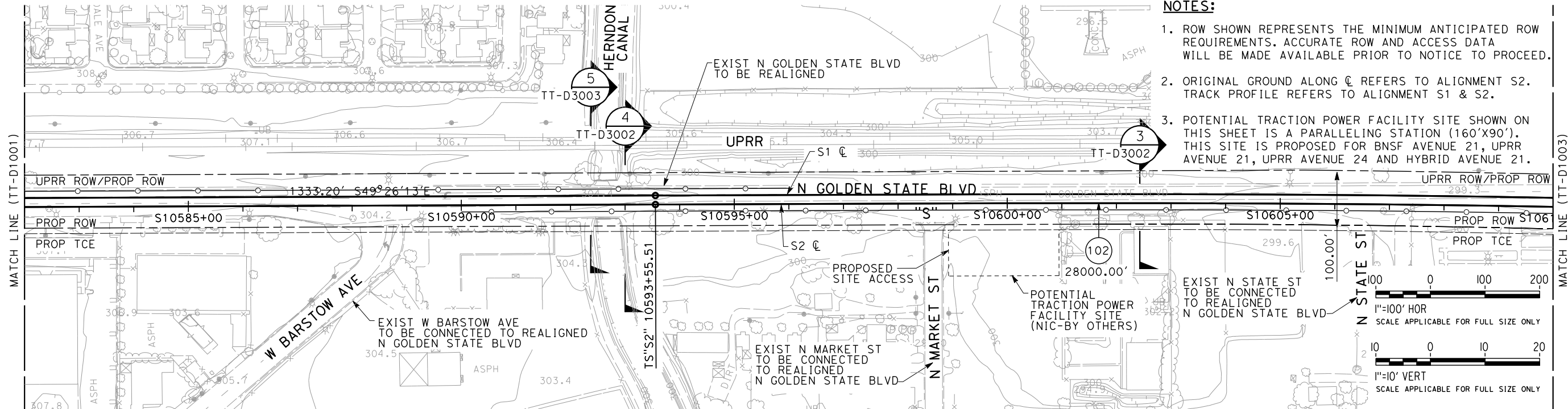
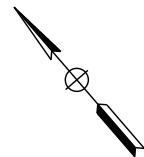


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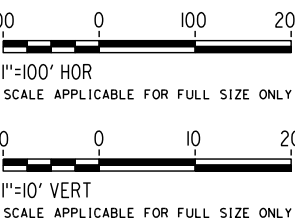


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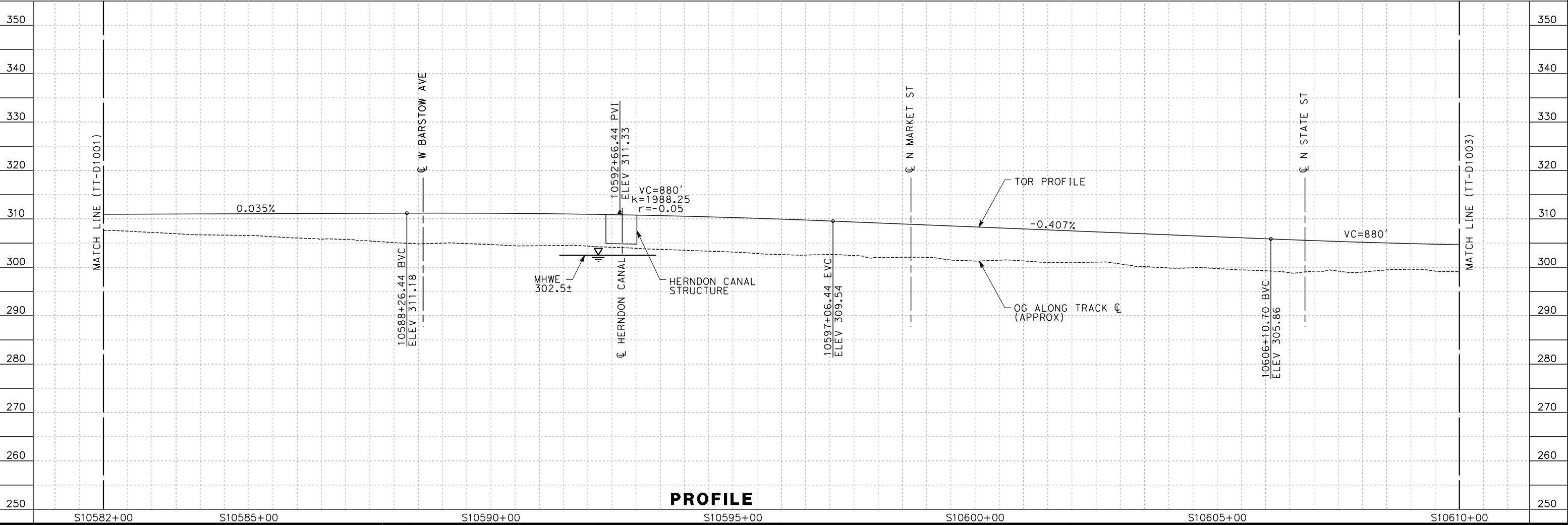
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**PROPOSED
PRELIMINARY
DESIGN**

**NOT FOR
CONSTRUCTION**



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2020 L Street, Suite 300
Sacramento, CA 95811





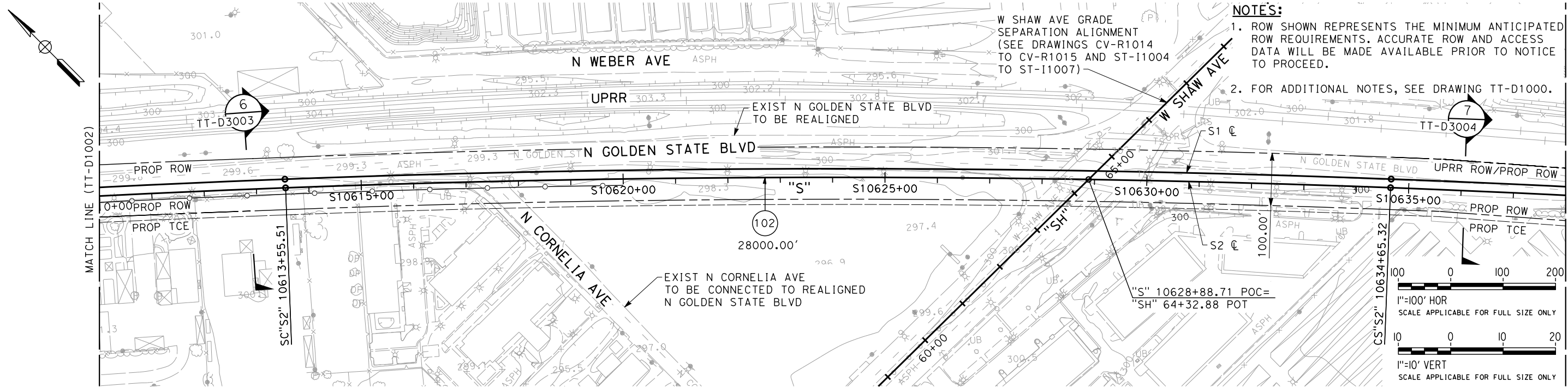
CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

**CALIFORNIA HIGH-SPEED TRAIN PROJECT
SIERRA SUBDIVISION**

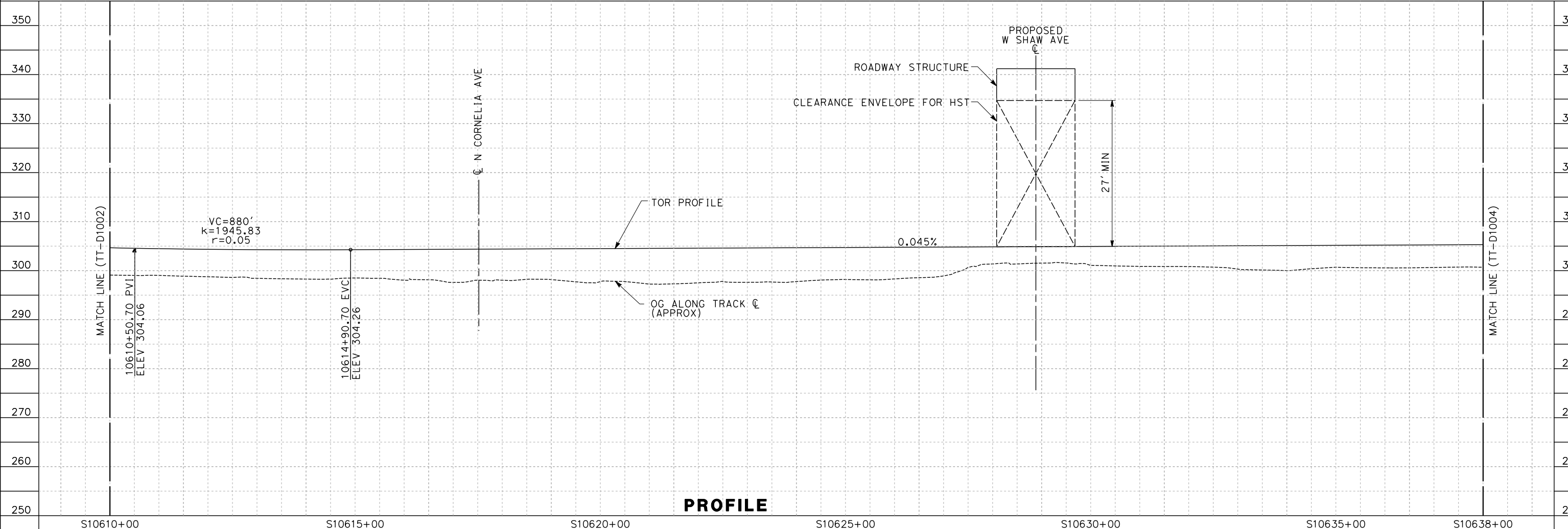
PACKAGE 1A
TRACK GUIDEWAY
PLAN AND PROFILE
STA. 10582+00 TO 10610+00

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| SHEET NO. |

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PROFILE

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| DESIGNED BY A. SHIELDS |
| DRAWN BY H. SULLIVAN |
| CHECKED BY A. BOONE |
| IN CHARGE A. BOONE |
| DATE 02/01/2012 |

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| PROPOSED PRELIMINARY DESIGN |
| NOT FOR CONSTRUCTION |

Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA 95811

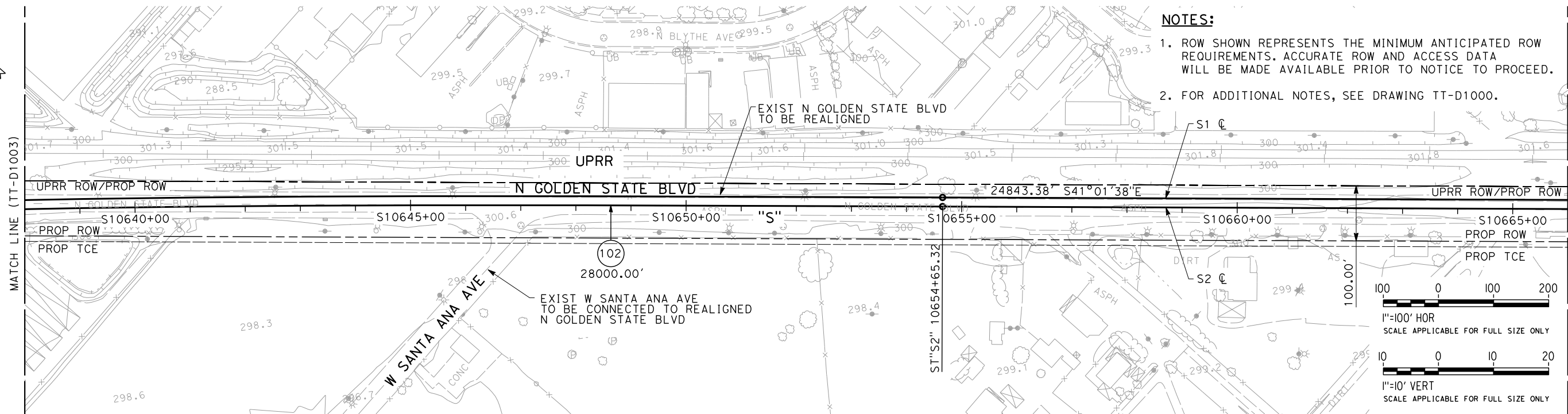
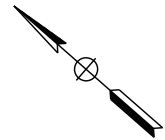
CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

**CALIFORNIA HIGH-SPEED TRAIN PROJECT
SIERRA SUBDIVISION**
PACKAGE 1A
TRACK GUIDEWAY
PLAN AND PROFILE
STA. 10610+00 TO 10638+00

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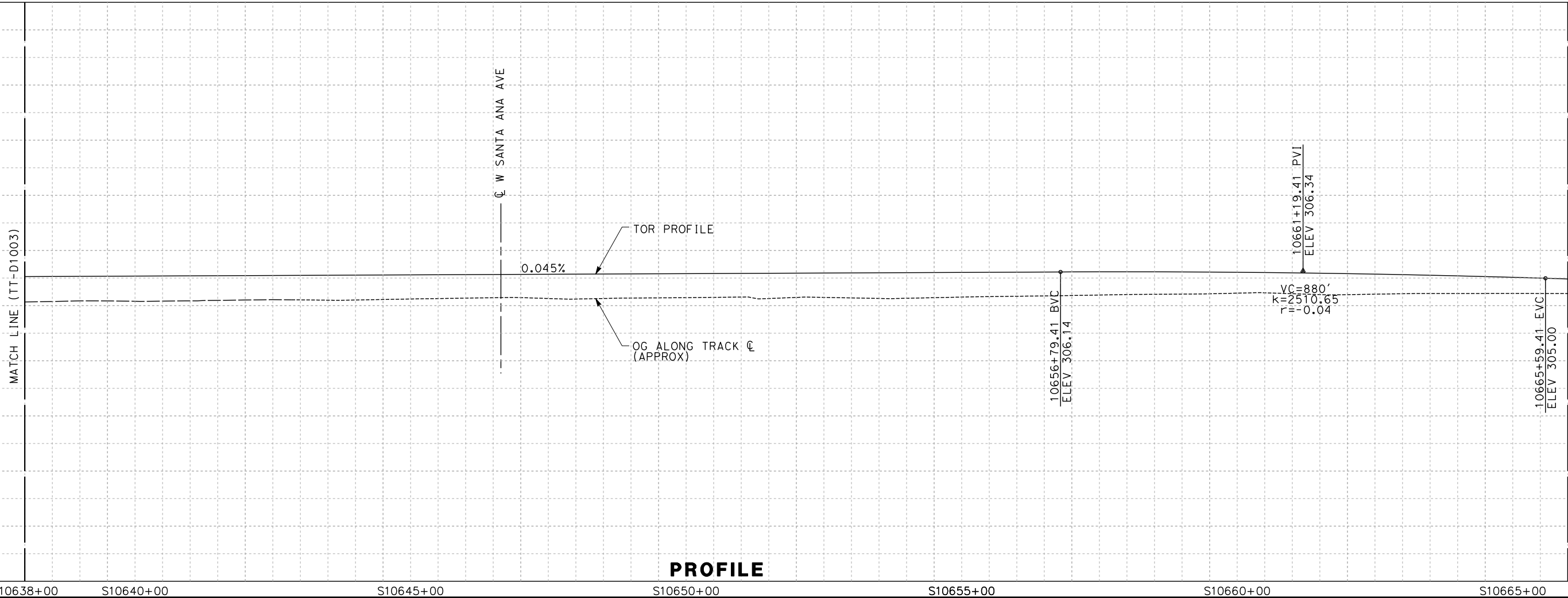
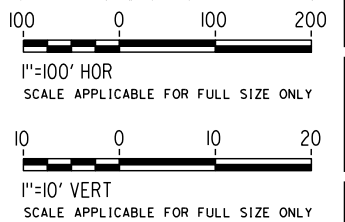
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shieldsa



NOTES:

1. ROW SHOWN REPRESENTS THE MINIMUM ANTICIPATED ROW REQUIREMENTS. ACCURATE ROW AND ACCESS DATA WILL BE MADE AVAILABLE PRIOR TO NOTICE TO PROCEED.
2. FOR ADDITIONAL NOTES, SEE DRAWING TT-D1000.



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| DESIGNED BY A. SHIELDS |
| DRAWN BY H. SULLIVAN |
| CHECKED BY A. BOONE |
| IN CHARGE A. BOONE |
| DATE 12/08/11 |

**PROPOSED
PRELIMINARY
DESIGN**

**NOT FOR
CONSTRUCTION**

Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA 95811

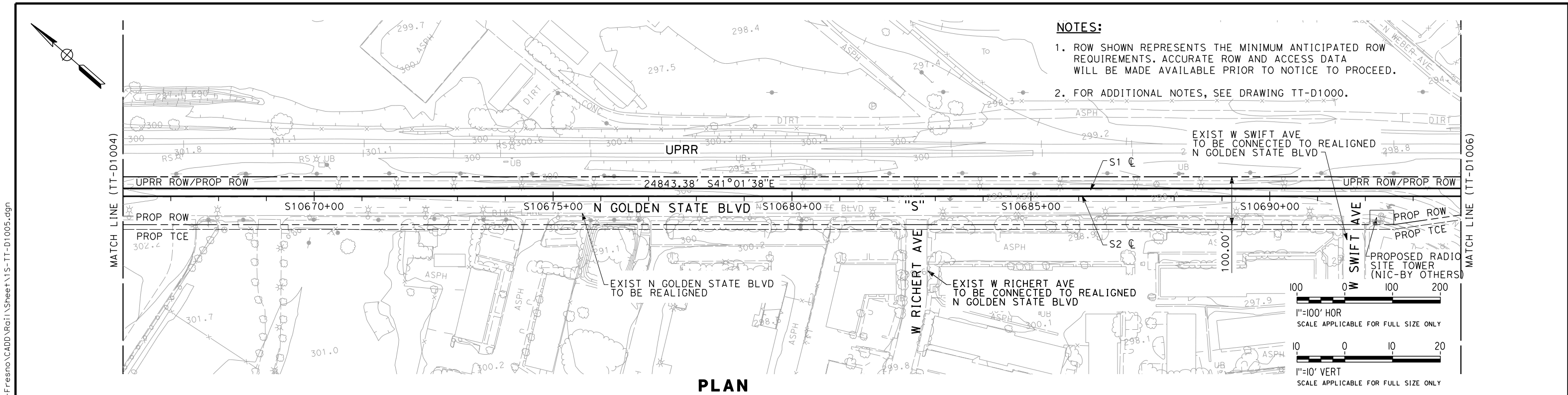


**CALIFORNIA HIGH-SPEED TRAIN PROJECT
SIERRA SUBDIVISION**

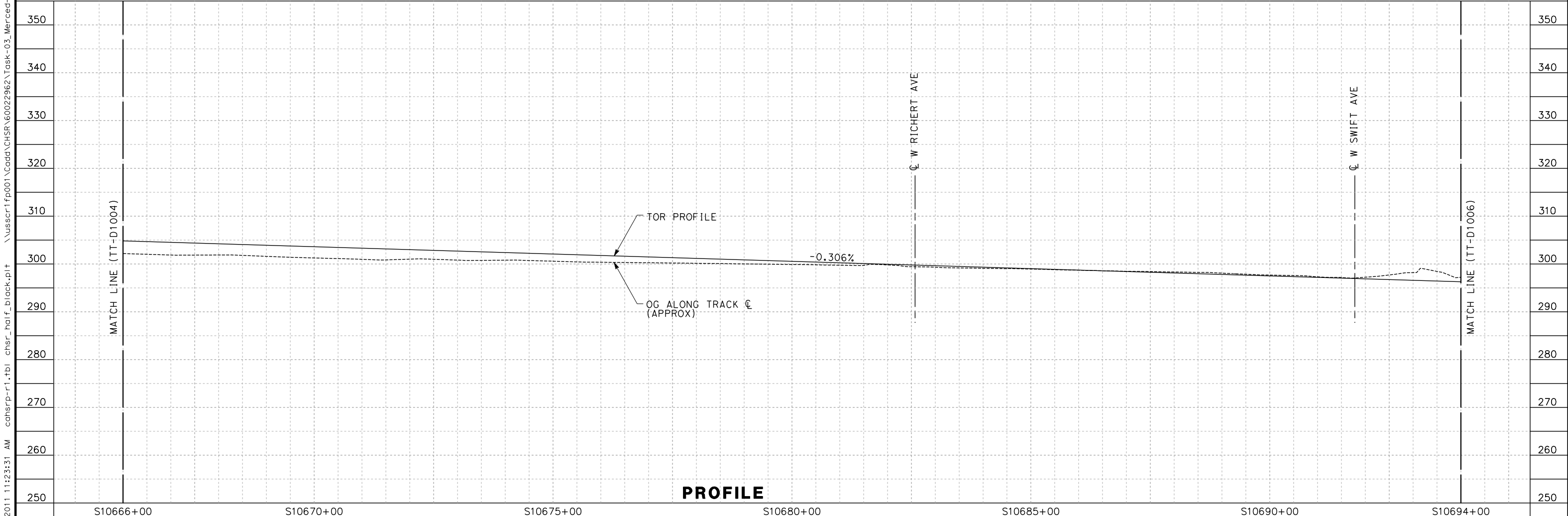
PACKAGE 1A
TRACK GUIDEWAY
PLAN AND PROFILE
STA. 10638+00 TO 10666+00

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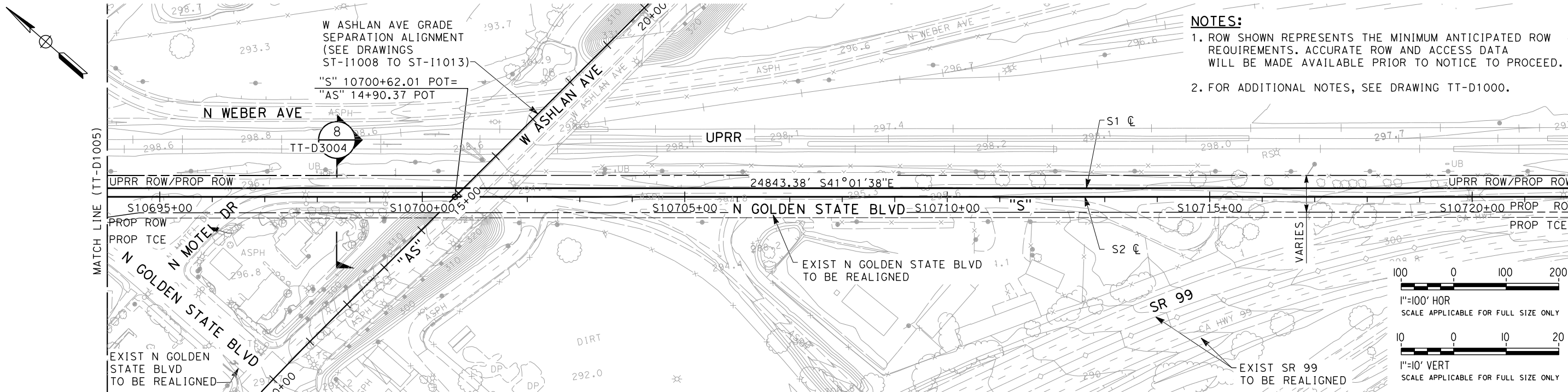
PLAN



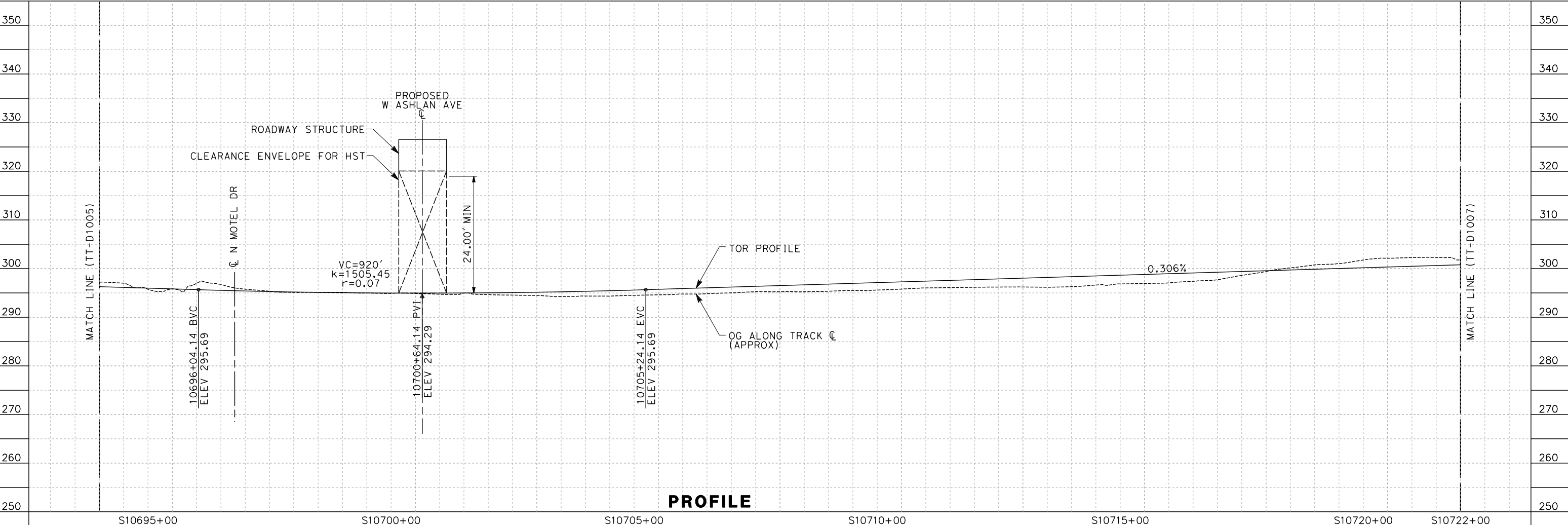
PROFILE

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| <div>shieldsa</div> | | | | | <div>DESIGNED BY A. SHIELDS DRAWN BY H. SULLIVAN CHECKED BY A. BOONE IN CHARGE A. BOONE DATE 12/08/11</div> | | | | | <div>PROPOSED PRELIMINARY DESIGN NOT FOR CONSTRUCTION</div> | | <div>AECOM <small>Technical Services, Inc. 2020 L Street, Suite 300 Sacramento, CA 95811</small> CH2MHILL</div> | | <div> CALIFORNIA <small>HIGH-SPEED RAIL AUTHORITY</small></div> | | <div>CALIFORNIA HIGH-SPEED TRAIN PROJECT SIERRA SUBDIVISION PACKAGE 1A TRACK GUIDEWAY PLAN AND PROFILE STA. 10666+00 TO 10694+00</div> | | | <div>CONTRACT NO. DRAWING NO. TT-D1005 SCALE AS SHOWN SHEET NO.</div> | |
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PLAN



PROFILE

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DESIGNED BY
A. SHIELDS

DRAWN BY
H. SULLIVAN

CHECKED BY
A. BOONE

IN CHARGE
A. BOONE

DATE
12/08/11

**PROPOSED
PRELIMINARY
DESIGN**

**NOT FOR
CONSTRUCTION**

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA 95811

CH2MHILL



**CALIFORNIA HIGH-SPEED TRAIN PROJECT
SIERRA SUBDIVISION**

PACKAGE 1A
TRACK GUIDEWAY
PLAN AND PROFILE
STA. 10694+00 TO 10722+00

CONTRACT NO.

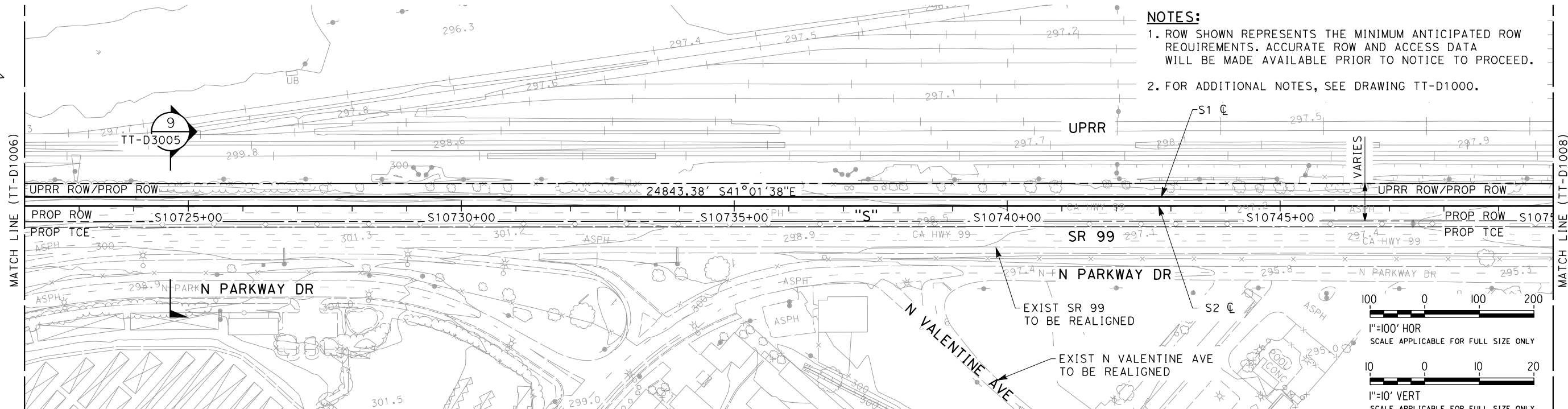
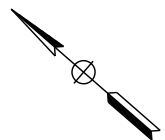
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SCALE
AS SHOWN

SHEET NO.

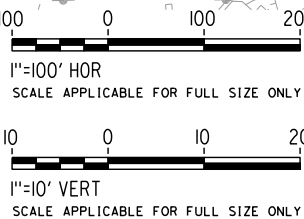
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shieldsa

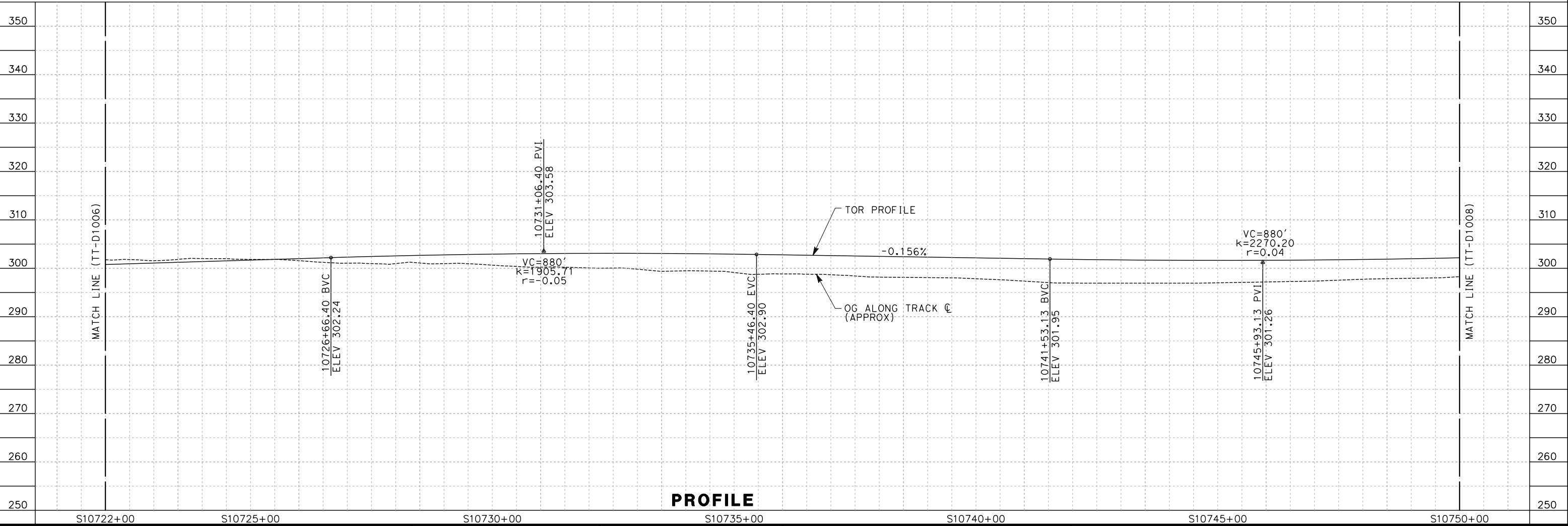


NOTES:

1. ROW SHOWN REPRESENTS THE MINIMUM ANTICIPATED ROW REQUIREMENTS. ACCURATE ROW AND ACCESS DATA WILL BE MADE AVAILABLE PRIOR TO NOTICE TO PROCEED.
2. FOR ADDITIONAL NOTES, SEE DRAWING TT-D1000.



PLAN



PROFILE

| REV | DATE | BY | CHK | APP | DESCRIPTION |
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| DESIGNED BY A. SHIELDS |
| DRAWN BY H. SULLIVAN |
| CHECKED BY A. BOONE |
| IN CHARGE A. BOONE |
| DATE 12/08/11 |

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| PROPOSED PRELIMINARY DESIGN |
| NOT FOR CONSTRUCTION |



Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA 95811





CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

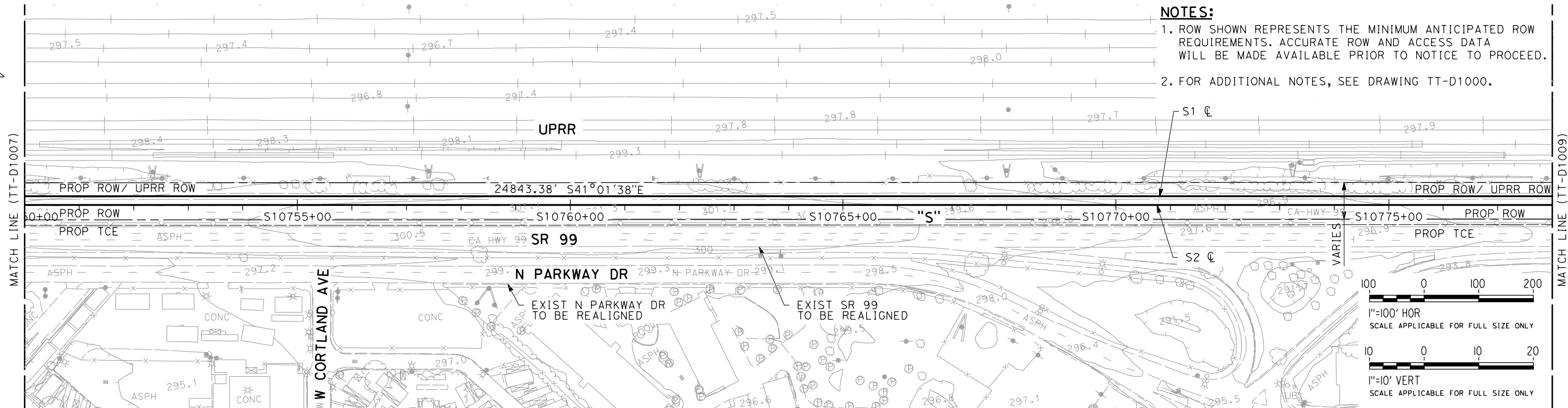
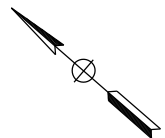
**CALIFORNIA HIGH-SPEED TRAIN PROJECT
SIERRA SUBDIVISION**

PACKAGE 1A
TRACK GUIDEWAY
PLAN AND PROFILE
STA. 10722+00 TO 10750+00

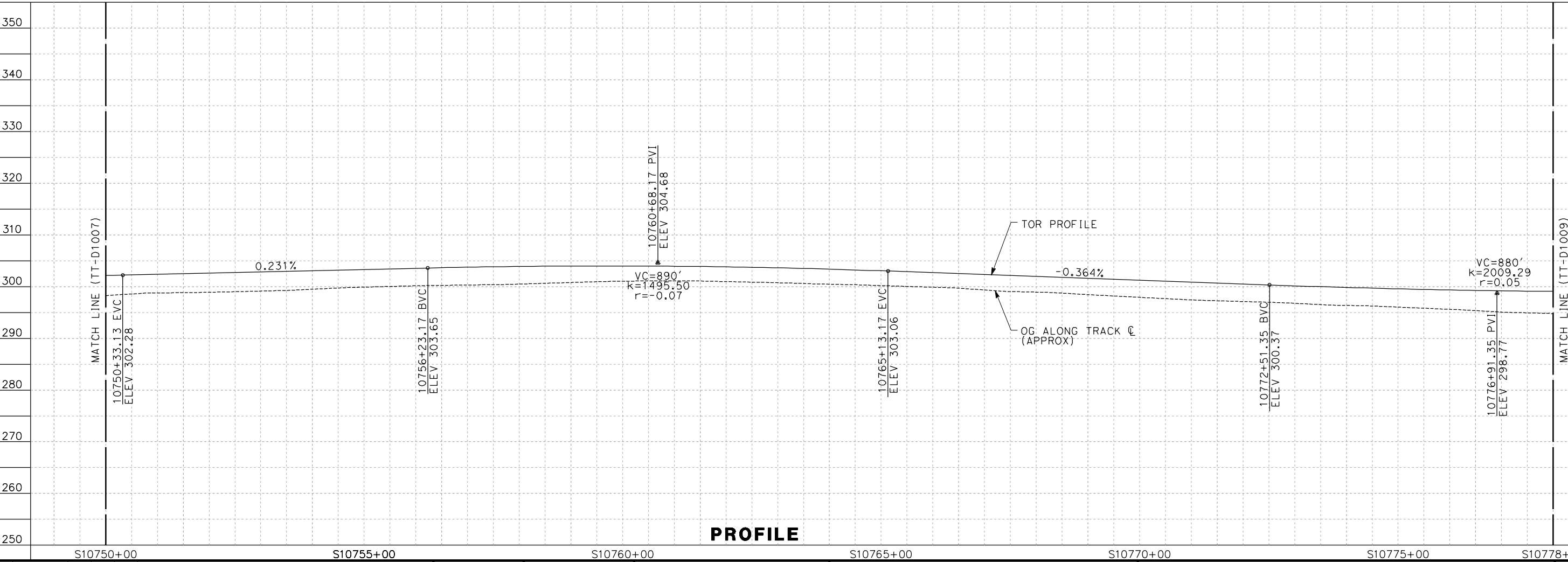
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sullivan



PLAN



PROFILE

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DESIGNED BY
A. SHIELDS
DRAWN BY
H. SULLIVAN
CHECKED BY
A. BOONE
IN CHARGE
A. BOONE
DATE
01/09/2012

**PROPOSED
PRELIMINARY
DESIGN**

**NOT FOR
CONSTRUCTION**

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA 95811

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**CALIFORNIA HIGH-SPEED TRAIN PROJECT
SIERRA SUBDIVISION
PACKAGE 1A
TRACK GUIDEWAY
PLAN AND PROFILE
STA. 10750+00 TO 10778+00**

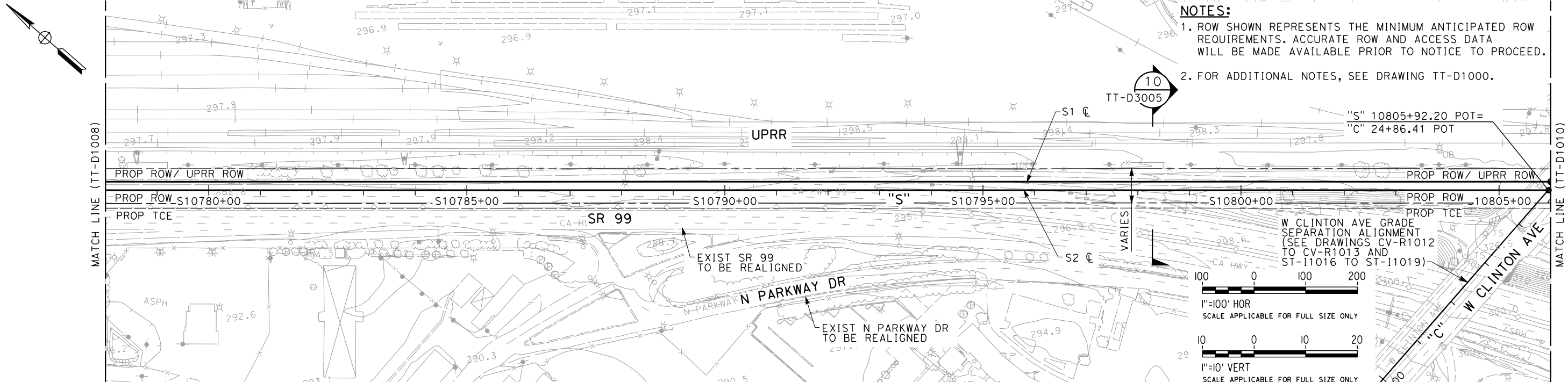
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DRAWING NO.
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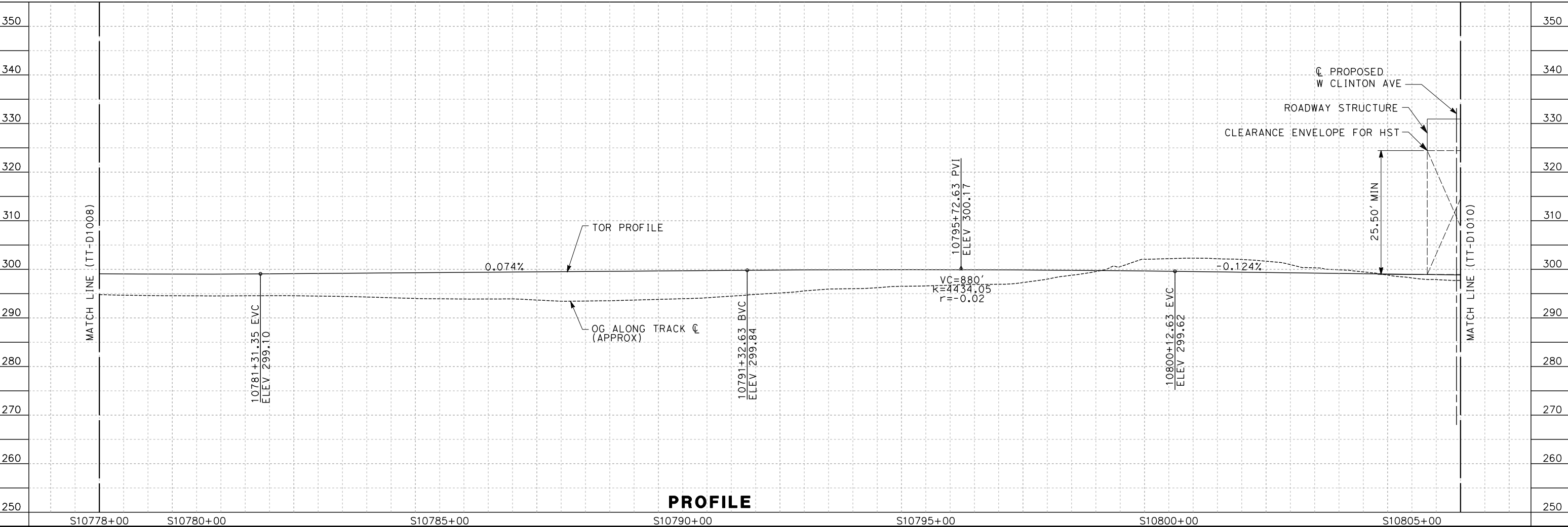
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AS SHOWN

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PLAN



PROFILE

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| DESIGNED BY A. SHIELDS |
| DRAWN BY H. SULLIVAN |
| CHECKED BY A. BOONE |
| IN CHARGE A. BOONE |
| DATE 12/08/11 |

**PROPOSED
PRELIMINARY
DESIGN**

**NOT FOR
CONSTRUCTION**

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA 95811

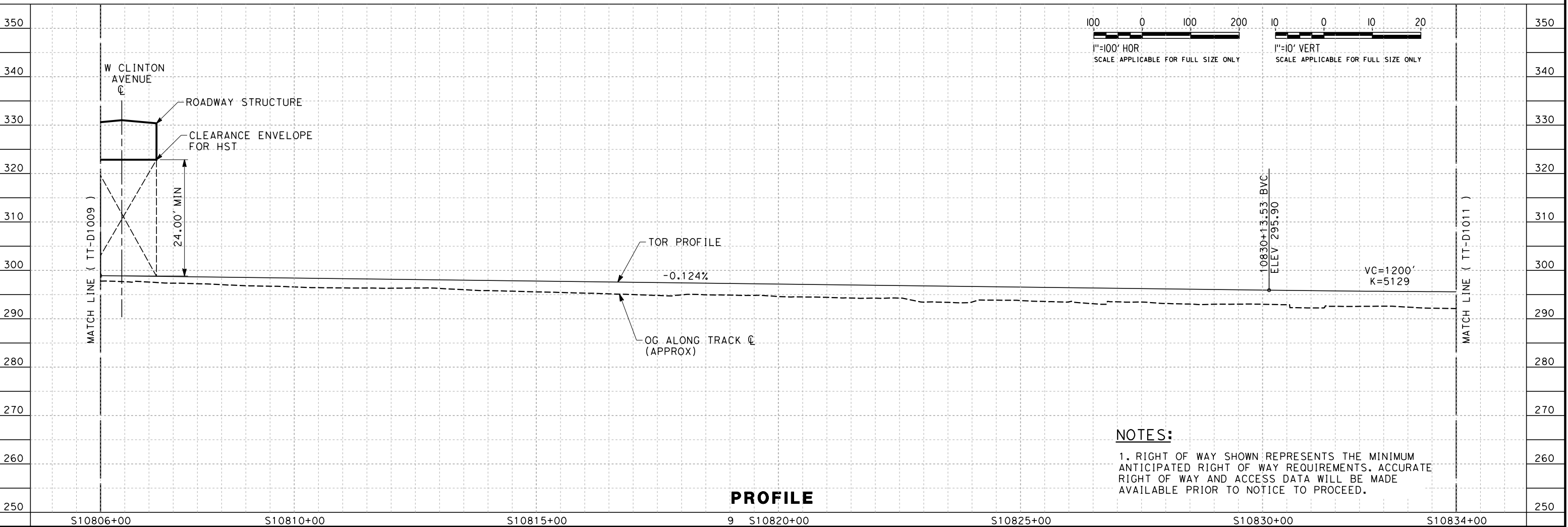
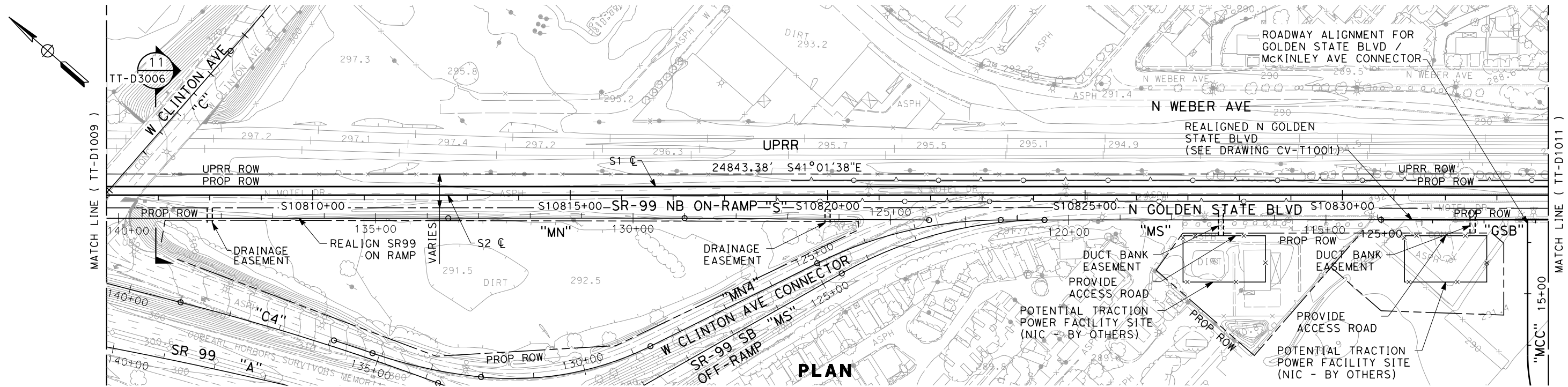
CH2MHILL



**CALIFORNIA HIGH-SPEED TRAIN PROJECT
SIERRA SUBDIVISION**

PACKAGE 1A
TRACK GUIDEWAY
PLAN AND PROFILE
STA. 10778+00 TO 10806+00

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| CONTRACT NO. |
| DRAWING NO. TT-D1009 |
| SCALE AS SHOWN |
| SHEET NO. |



NOTES:

1. RIGHT OF WAY SHOWN REPRESENTS THE MINIMUM ANTICIPATED RIGHT OF WAY REQUIREMENTS. ACCURATE RIGHT OF WAY AND ACCESS DATA WILL BE MADE AVAILABLE PRIOR TO NOTICE TO PROCEED.

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| REV | DATE | BY | CHK | APP | DESCRIPTION |

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| DESIGNED BY K. SEYMOUR |
| DRAWN BY P. TONKIN |
| CHECKED BY D. HUNT |
| IN CHARGE R. COFFIN |
| DATE 02/21/1 |

**PROPOSED
PRELIMINARY
DESIGN**

**NOT FOR
CONSTRUCTION**



CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
SIERRA SUBDIVISION
PACKAGE 1A
TRACK GUIDEWAY
PLAN AND PROFILE
STA. 10806+00 TO STA. 10834+00

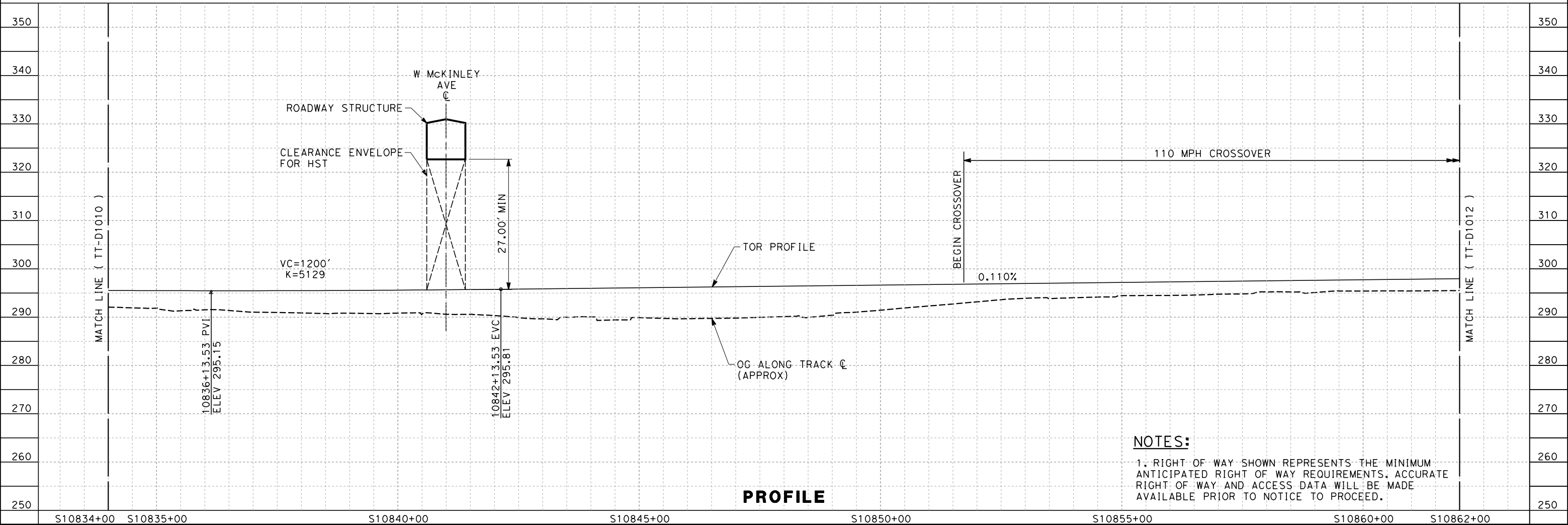
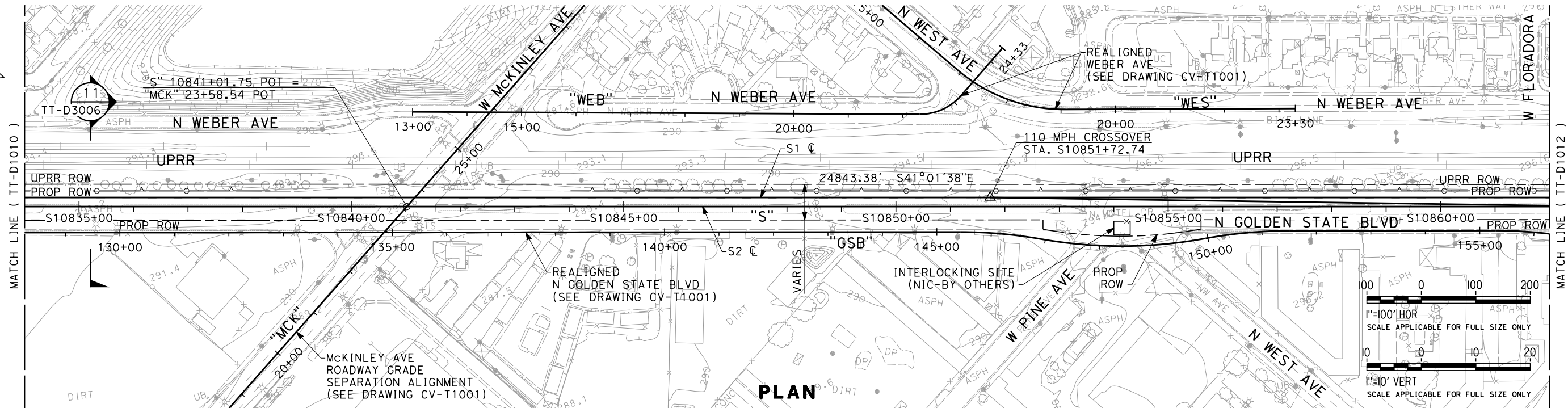
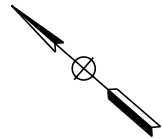
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DRAWING NO.
TT-D1010

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NOTES:

1. RIGHT OF WAY SHOWN REPRESENTS THE MINIMUM ANTICIPATED RIGHT OF WAY REQUIREMENTS. ACCURATE RIGHT OF WAY AND ACCESS DATA WILL BE MADE AVAILABLE PRIOR TO NOTICE TO PROCEED.

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| DESIGNED BY K. SEYMOUR |
| DRAWN BY P. TONKIN |
| CHECKED BY D. HUNT |
| IN CHARGE R. COFFIN |
| DATE 02/21/12 |

**PROPOSED
PRELIMINARY
DESIGN**

**NOT FOR
CONSTRUCTION**

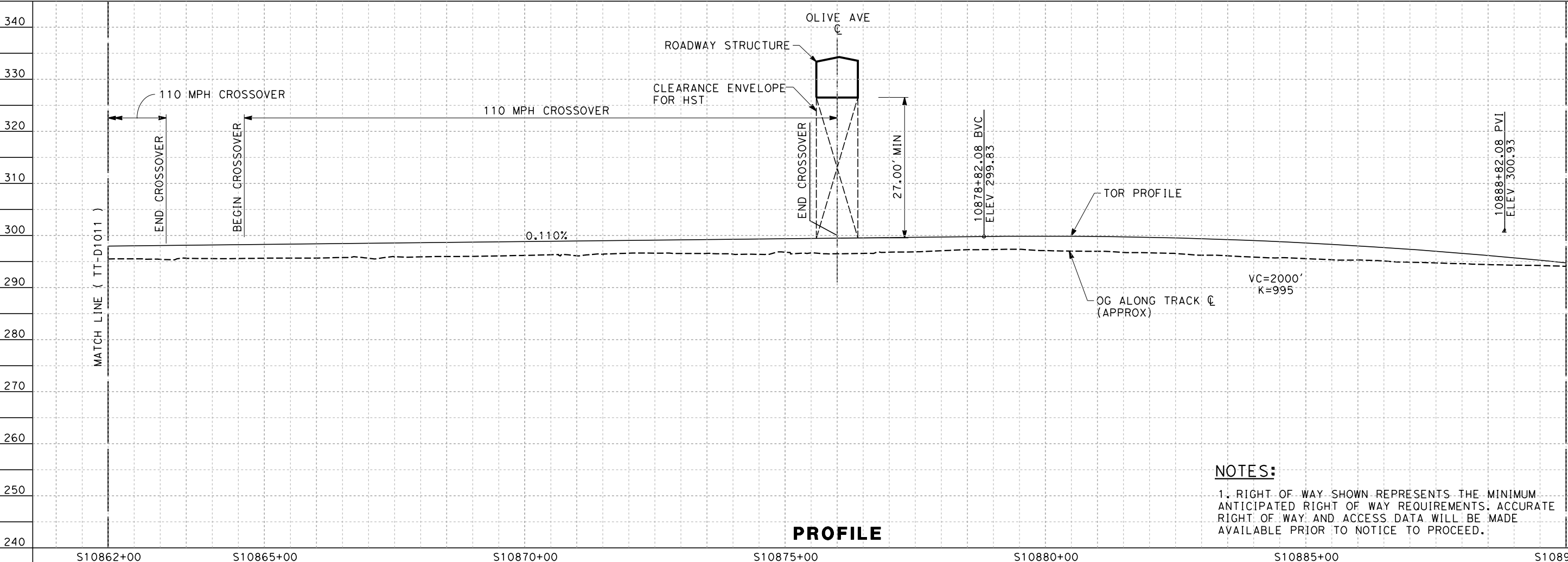
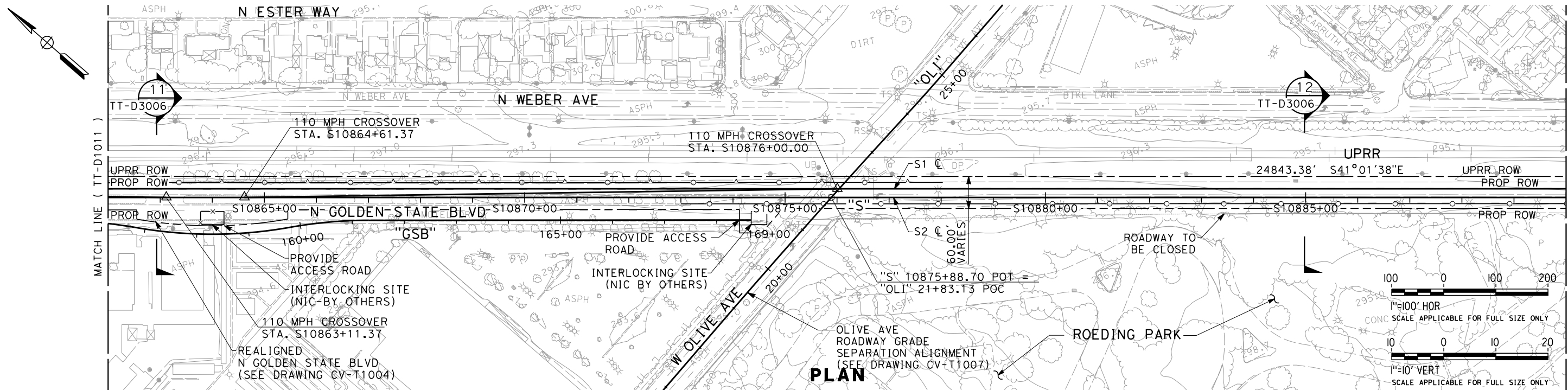


CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

**CALIFORNIA HIGH-SPEED TRAIN PROJECT
SIERRA SUBDIVISION**
PACKAGE 1A
TRACK GUIDEWAY
PLAN AND PROFILE
STA. 10834+00 TO STA. 10862+00

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| CONTRACT NO. |
| DRAWING NO. TT-D1011 |
| SCALE AS SHOWN |
| SHEET NO. |

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NOTES:
1. RIGHT OF WAY SHOWN REPRESENTS THE MINIMUM ANTICIPATED RIGHT OF WAY REQUIREMENTS. ACCURATE RIGHT OF WAY AND ACCESS DATA WILL BE MADE AVAILABLE PRIOR TO NOTICE TO PROCEED.

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DESIGNED BY
K. SEYMOUR
DRAWN BY
P. TONKIN
CHECKED BY
D. HUNT
IN CHARGE
R. COFFIN
DATE
02/21/12

**PROPOSED
PRELIMINARY
DESIGN**

**NOT FOR
CONSTRUCTION**

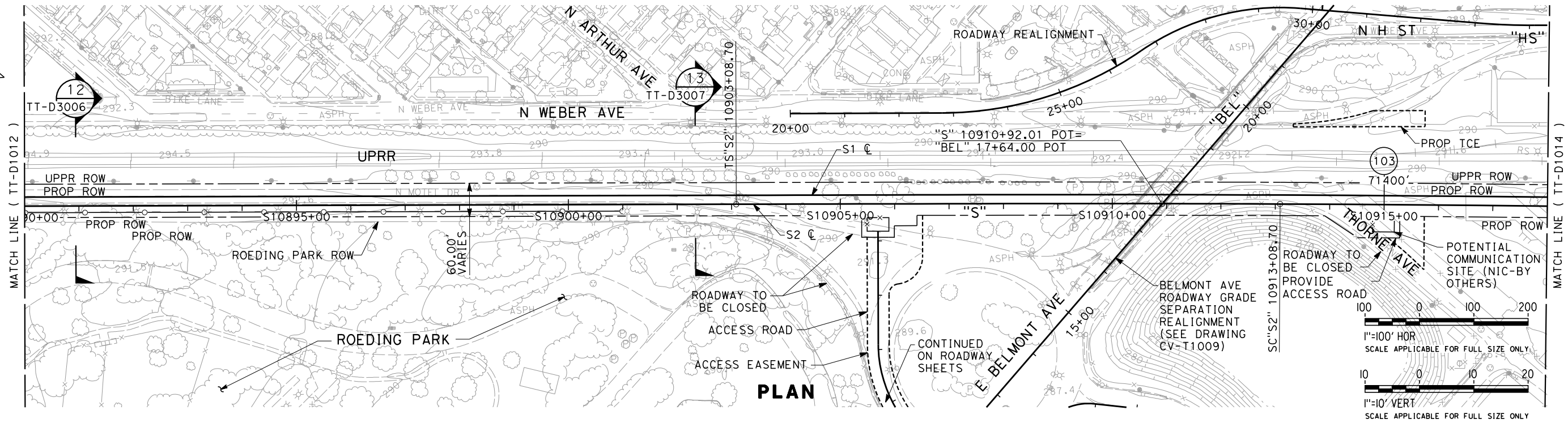
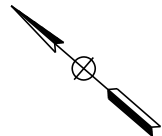


**CALIFORNIA HIGH-SPEED TRAIN PROJECT
SIERRA SUBDIVISION**
PACKAGE 1A
TRACK GUIDEWAY
PLAN AND PROFILE
STA. 10862+00 TO STA. 10890+00

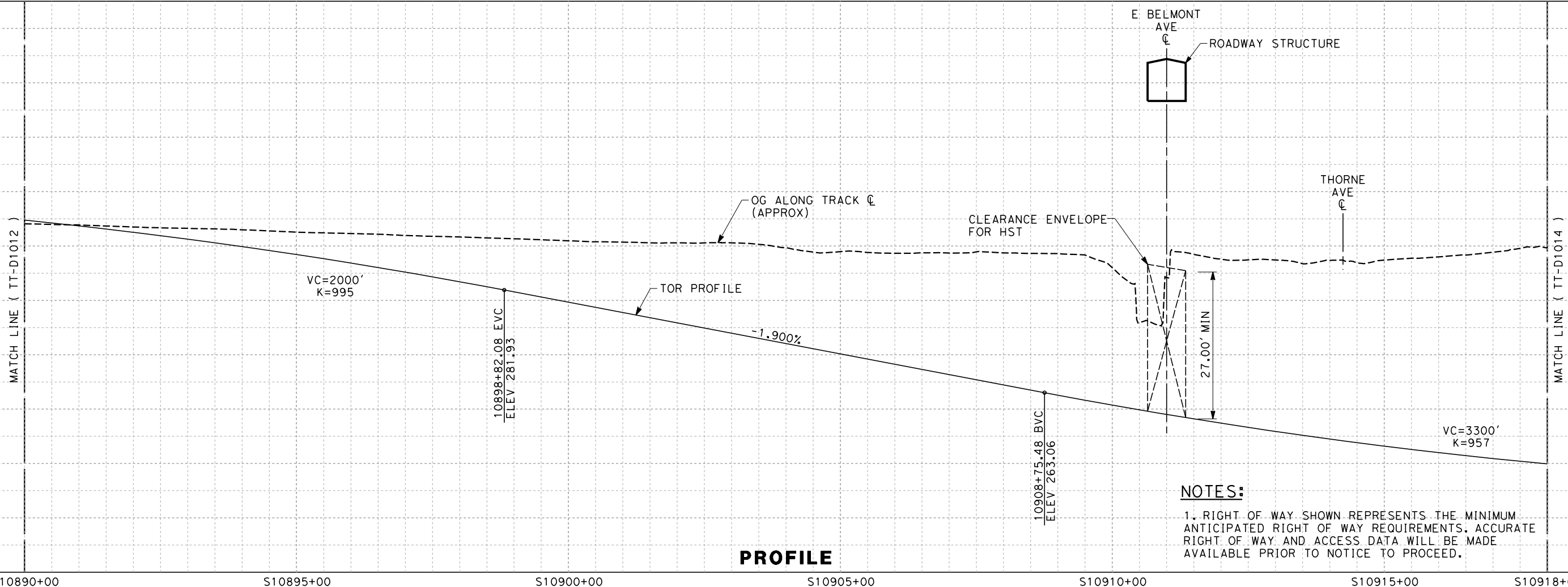
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PLAN



PROFILE

NOTES:

1. RIGHT OF WAY SHOWN REPRESENTS THE MINIMUM ANTICIPATED RIGHT OF WAY REQUIREMENTS. ACCURATE RIGHT OF WAY AND ACCESS DATA WILL BE MADE AVAILABLE PRIOR TO NOTICE TO PROCEED.

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|---------------------------|
| DESIGNED BY K. SEYMOUR |
| DRAWN BY P. TONKIN |
| CHECKED BY D. HUNT |
| IN CHARGE R. COFFIN |
| DATE 02/21/12 |

PROPOSED
PRELIMINARY
DESIGN

NOT FOR
CONSTRUCTION

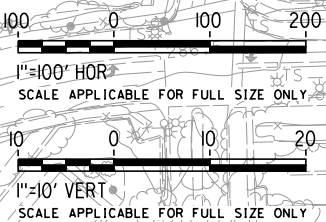
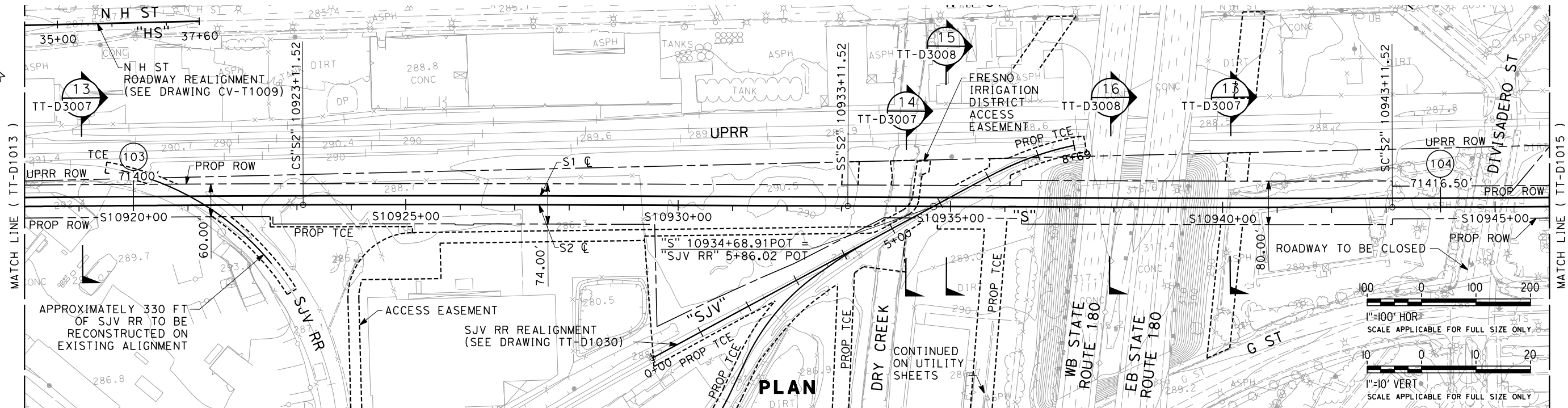
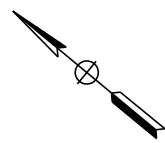


CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

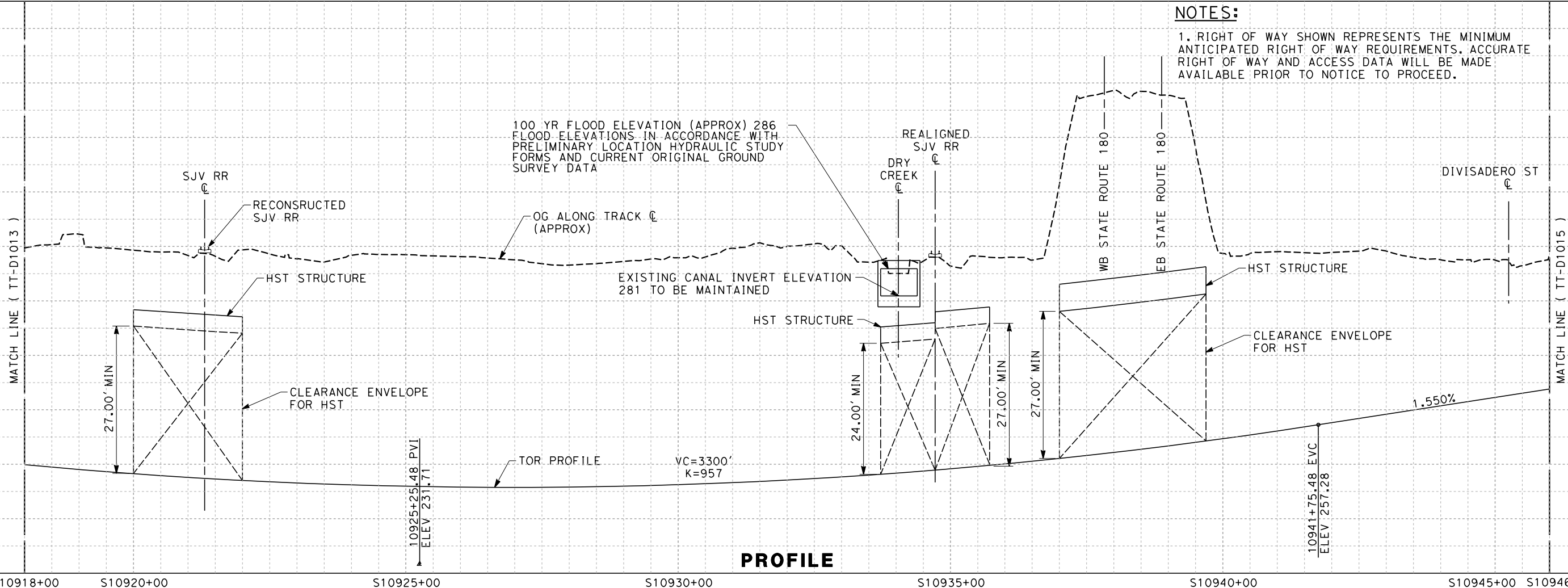
CALIFORNIA HIGH-SPEED TRAIN PROJECT
SIERRA SUBDIVISION
PACKAGE 1A
TRACK GUIDEWAY
PLAN AND PROFILE
STA. 10890+00 TO STA. 10918+00

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| CONTRACT NO. |
| DRAWING NO. TT-D1013 |
| SCALE AS SHOWN |
| SHEET NO. |

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NOTES:
1. RIGHT OF WAY SHOWN REPRESENTS THE MINIMUM ANTICIPATED RIGHT OF WAY REQUIREMENTS. ACCURATE RIGHT OF WAY AND ACCESS DATA WILL BE MADE AVAILABLE PRIOR TO NOTICE TO PROCEED.



PROFILE

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DESIGNED BY
K. SEYMOUR
DRAWN BY
P. TONKIN
CHECKED BY
D. HUNT
IN CHARGE
R. COFFIN
DATE
02/17/12

**PROPOSED
PRELIMINARY
DESIGN**

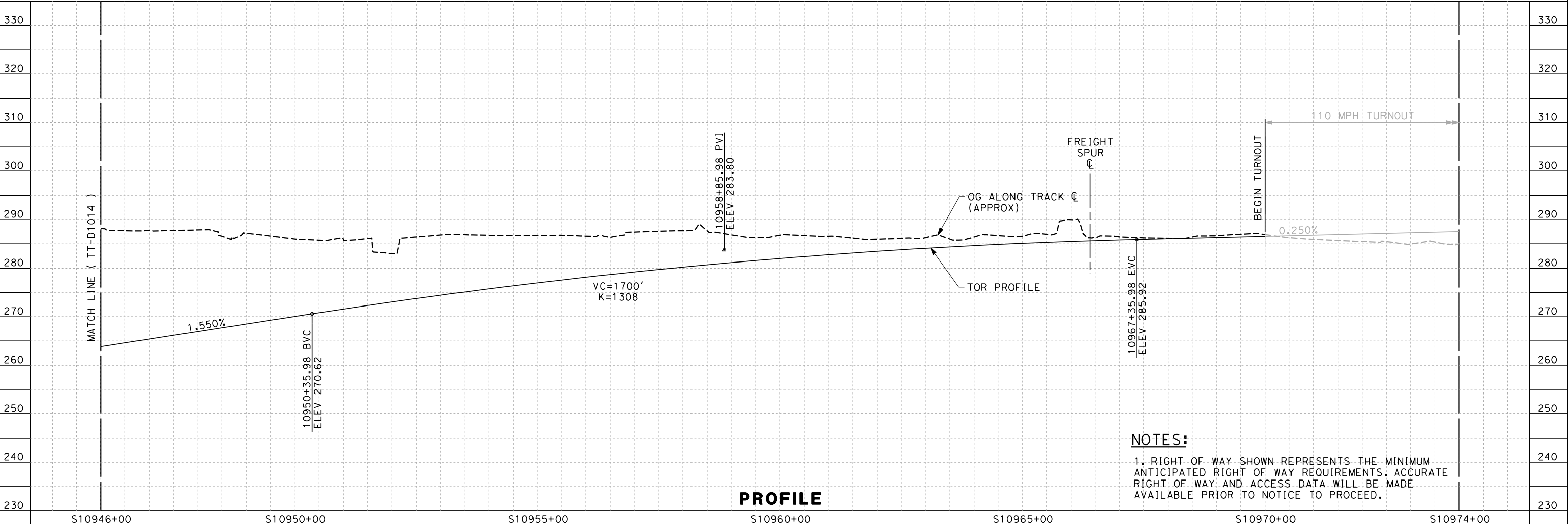
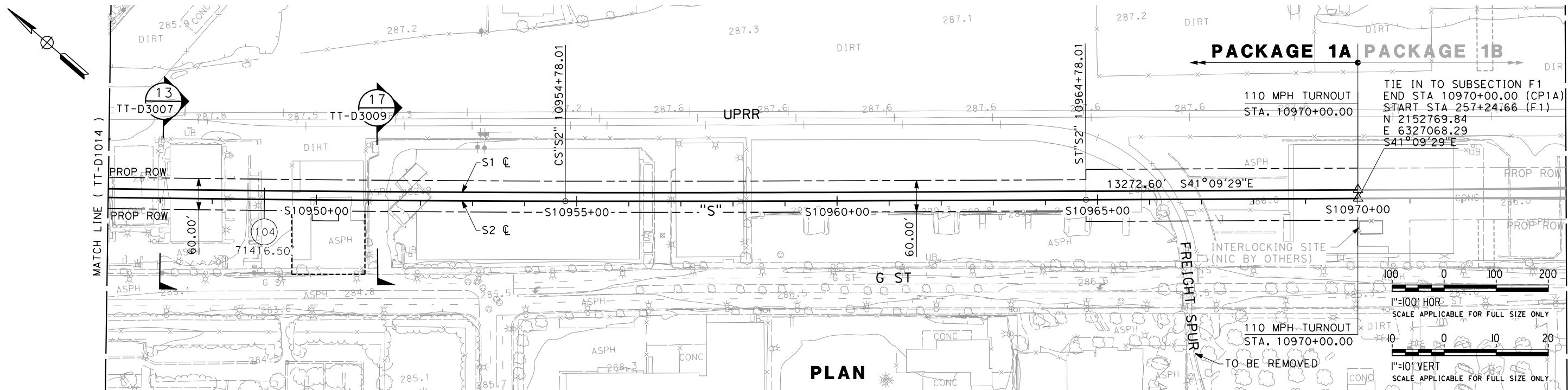
**NOT FOR
CONSTRUCTION**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT
SIERRA SUBDIVISION**
PACKAGE 1A
TRACK GUIDEWAY
PLAN AND PROFILE
STA. 10918+00 TO STA. 10946+00

CONTRACT NO.
DRAWING NO.
TT-D1014
SCALE
AS SHOWN
SHEET NO.

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NOTES:
1. RIGHT OF WAY SHOWN REPRESENTS THE MINIMUM ANTICIPATED RIGHT OF WAY REQUIREMENTS. ACCURATE RIGHT OF WAY AND ACCESS DATA WILL BE MADE AVAILABLE PRIOR TO NOTICE TO PROCEED.

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DESIGNED BY
K. SEYMOUR
DRAWN BY
P. TONKIN
CHECKED BY
D. HUNT
IN CHARGE
R. COFFIN
DATE
02/21/12

**PROPOSED
PRELIMINARY
DESIGN**

**NOT FOR
CONSTRUCTION**



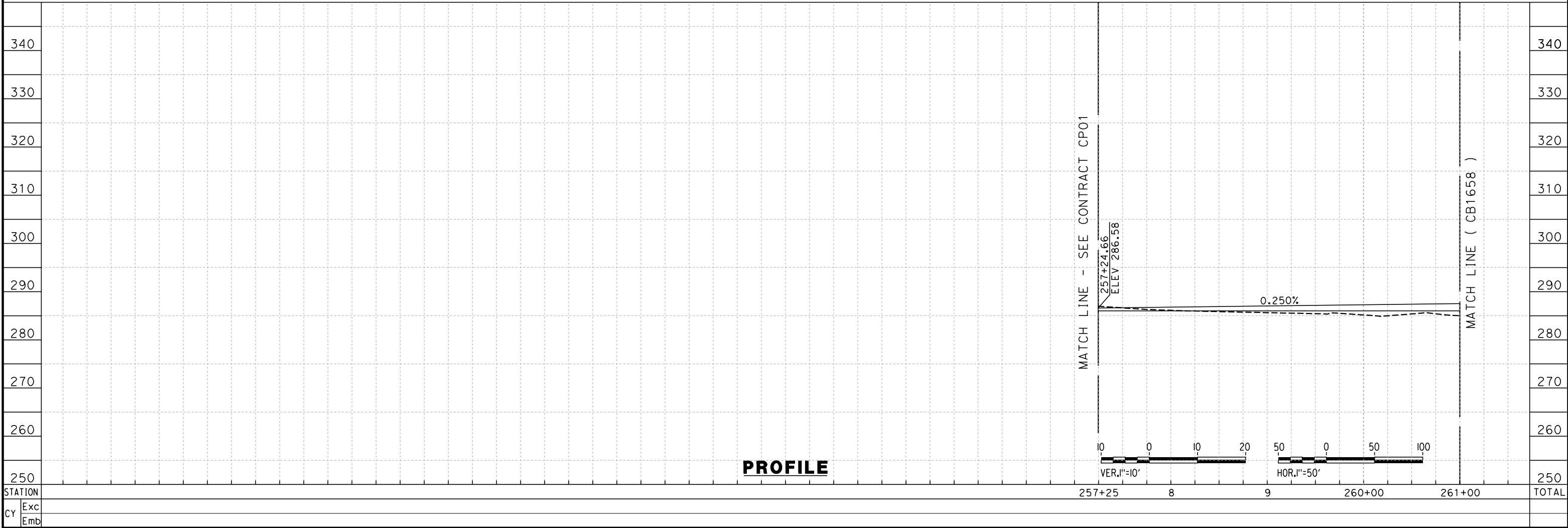
**CALIFORNIA HIGH-SPEED TRAIN PROJECT
SIERRA SUBDIVISION**
PACKAGE 1A
TRACK GUIDEWAY
PLAN AND PROFILE
STA. 10946+00 TO STA. 10974+00

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| CONTRACT NO. |
| DRAWING NO. TT-D1015 |
| SCALE AS SHOWN |
| SHEET NO. |

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PLAN



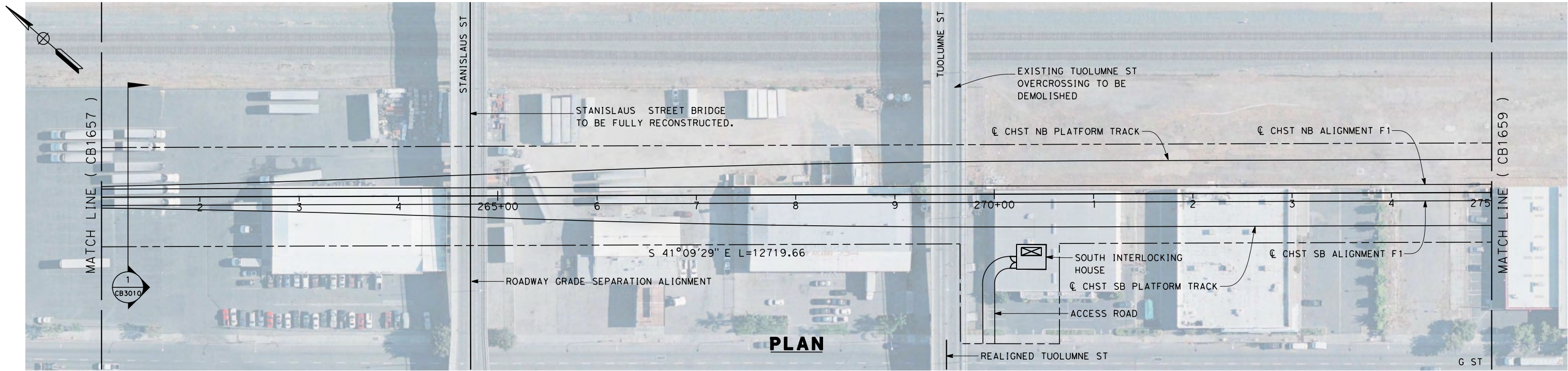
PROFILE

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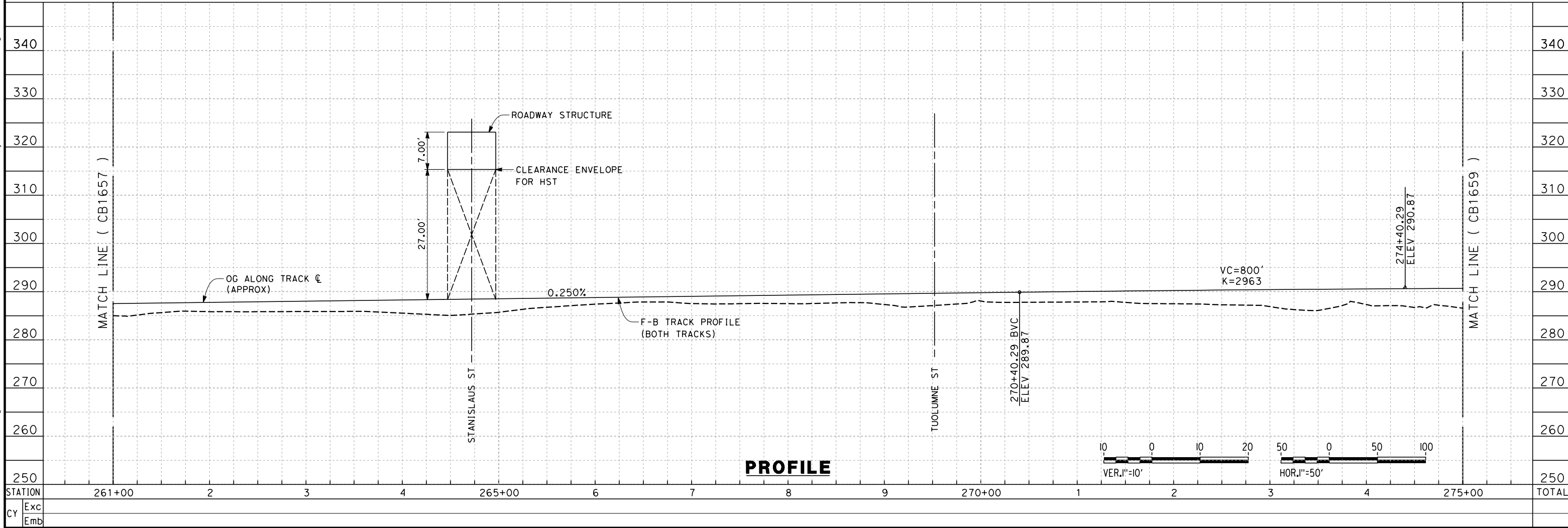
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|---------------------------|--|--|--|
| DESIGNED BY K. SEYMOUR | RECORD SET 15% DESIGN SUBMISSION NOT FOR CONSTRUCTION |  CALIFORNIA HIGH-SPEED TRAIN |  CALIFORNIA HIGH-SPEED RAIL AUTHORITY |
| DRAWN BY P. TONKIN | | | |
| CHECKED BY D. HUNT | | | |
| IN CHARGE R. COFFIN | | | |
| DATE 02/15/12 | | | |

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| CALIFORNIA HIGH-SPEED TRAIN PROJECT FRESNO TO BAKERSFIELD | | CONTRACT NO. HSR 06-0003 |
| FRESNO SUBSECTION ALIGNMENT F1 | | DRAWING NO. CB1657 |
| STA. 257+24.56 TO 261+00 PLAN AND PROFILE | | SCALE AS SHOWN |
| | | SHEET NO. 2 OF 23 |

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keith.seymour



PLAN



PROFILE

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DESIGNED BY
K. SEYMOUR
DRAWN BY
P. TONKIN
CHECKED BY
D. HUNT
IN CHARGE
R. COFFIN
DATE
04/03/12

RECORD SET 15%
DESIGN SUBMISSION

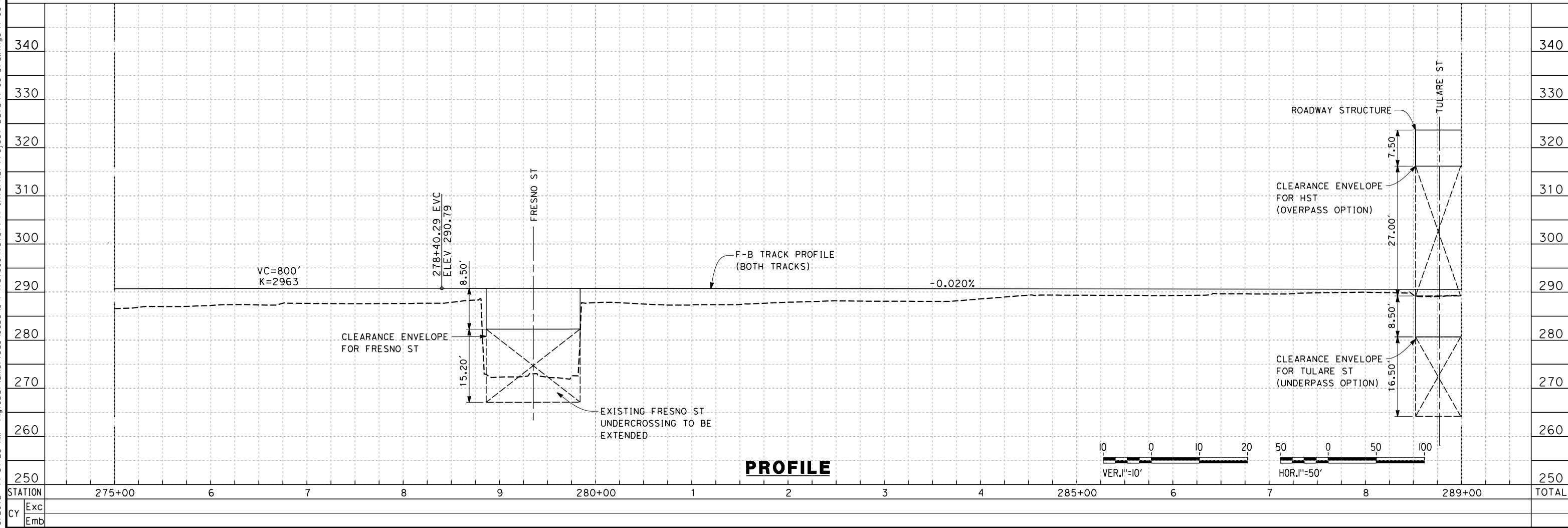
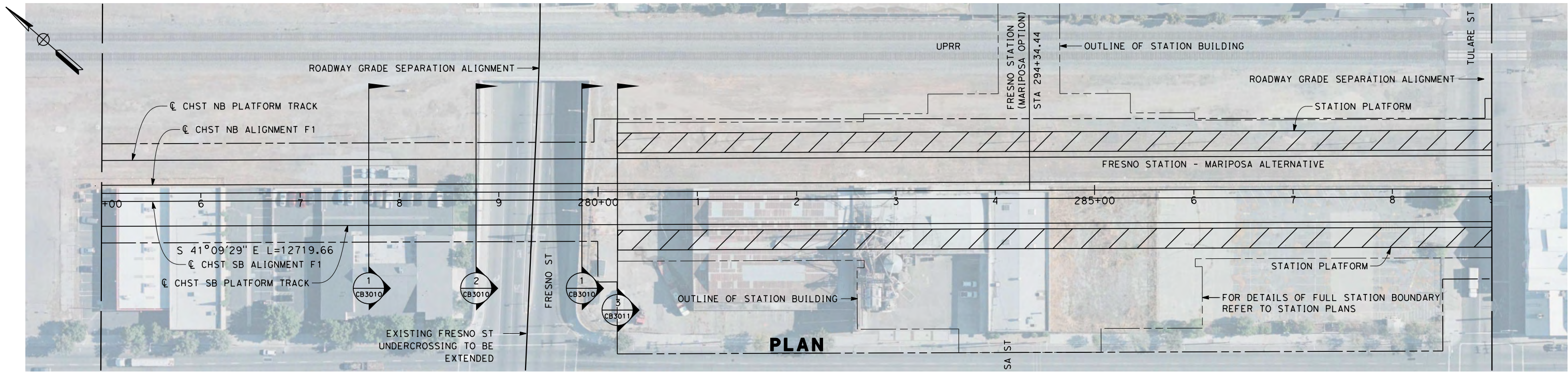
NOT FOR
CONSTRUCTION



CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
FRESNO SUBSECTION
ALIGNMENT F1
STA. 261+00 TO 275+00
PLAN AND PROFILE

CONTRACT NO.
HSR 06-0003
DRAWING NO.
CB1658
SCALE
AS SHOWN
SHEET NO.

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| REV | DATE | BY | CHK | APP | DESCRIPTION |
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DESIGNED BY
K. SEYMOUR
DRAWN BY
P. TONKIN
CHECKED BY
D. HUNT
IN CHARGE
R. COFFIN
DATE
02/15/12

RECORD SET 15%
DESIGN SUBMISSION

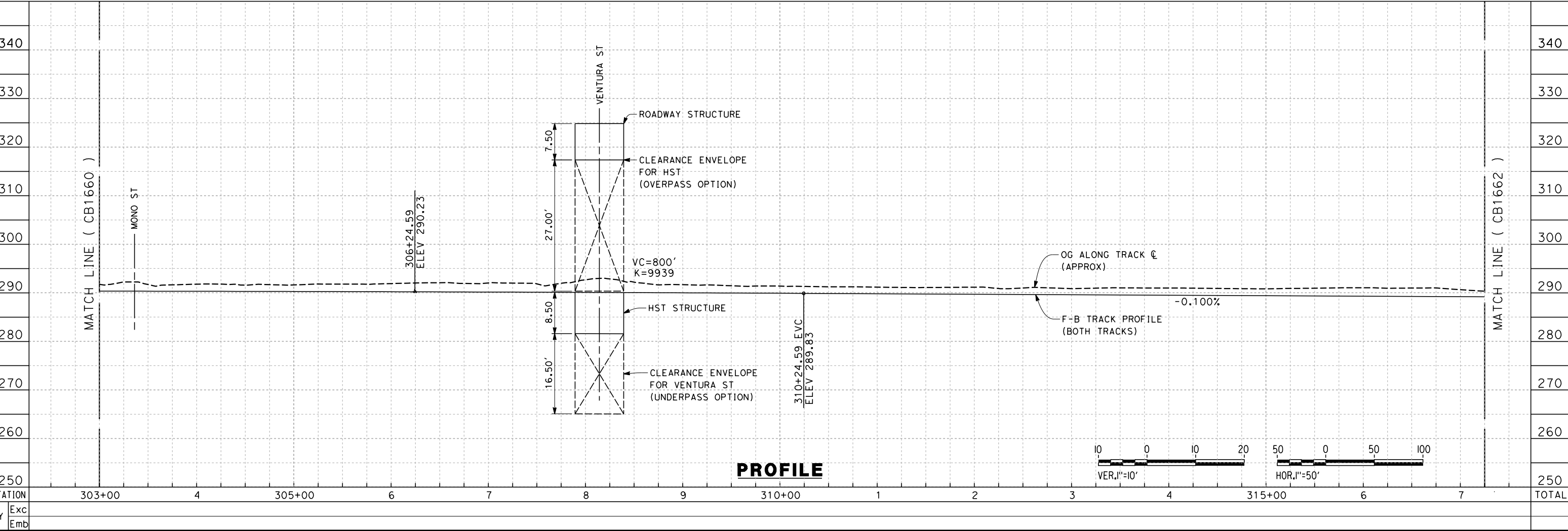
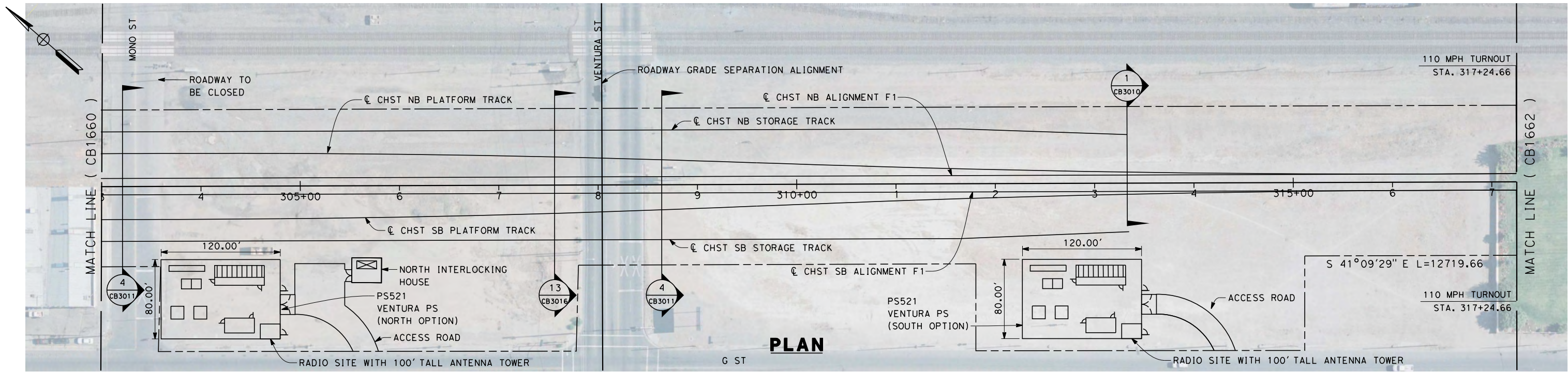
NOT FOR
CONSTRUCTION



CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
FRESNO SUBSECTION
ALIGNMENT F1
STA. 275+00 TO 289+00
PLAN AND PROFILE

CONTRACT NO.
HSR 06-0003
DRAWING NO.
CB1659
SCALE
AS SHOWN
SHEET NO.
4 OF 23

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| DESIGNED BY K. SEYMOUR |
| DRAWN BY P. TONKIN |
| CHECKED BY D. HUNT |
| IN CHARGE R. COFFIN |
| DATE 04/03/12 |

**RECORD SET 15%
DESIGN SUBMISSION**

**NOT FOR
CONSTRUCTION**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD**

FRESNO SUBSECTION
ALIGNMENT F1
STA. 303+00 TO 317+25
PLAN AND PROFILE

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| CONTRACT NO. HSR 06-0003 |
| DRAWING NO. CB1661 |
| SCALE AS SHOWN |
| SHEET NO. |

